

Faculty Research Productivity at Assumption University Thailand

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Dedication

I dedicate this dissertation to Assumption University, Thailand where I started my college life and the first step of my first career. I have learned so much from invaluable experiences there.

Abstract

The purpose of this study is to determine the factors associated with faculty's perceptions of their roles as researchers at a Thai private university, Assumption (AU). In recent decades there has been a dramatic increase in the size of Thailand's higher education sector reflecting both the trends of massification and privatization. One of Thailand's leading private universities is Assumption with a new world-class campus located in Bang Na near the new Bangkok international airport.

The university is Thailand's first international university and grew out of Assumption College (an elite private Catholic P-12 school) and ABAC (a highly successful business college and university). The institution has a long tradition of attracting top students and offering them a quality education that prepares them well to join the elite in business, government, and academic sectors.

Despite the rapid growth of Thai higher education, Thai universities do not fare well in international ranking systems. The major reason is the lack of research productivity of Thai faculty in higher education. It is a key assumption of this dissertation that effective research and development contribute to national productivity and competitiveness.

In this research the methodology is case study research and there is the use of triangulated qualitative research methods including extensive document analysis and

interviews with diverse stakeholders such as AU administrators and faculty. Also interviewed are national and international experts knowledgeable to the Thai higher education landscape. A total of individuals were interviewed with a 100% response rate.

Overall, it is found that research productivity is highly skewed with a small number of faculty actively engaged in research, while the majority are much less active or inactive.

A tetrahedron model is used to reflect the four key factors found to influence the productivity of faculty, namely, 1) motivation and incentives, 2) resources, 3) skills, and 4) Thai politics and culture.

Various suggestions are presented to enhance research productivity at AU such as the development of a long-term plan to give greater priority and resources to research. The plan would include activities such as special training and grant development workshops, mentoring, hiring outstanding faculty with proven research records, and the promotion of research collaboration with international scholars. The “triple helix model” is also presented reflecting the need for much greater cooperation among the business, government, and academic sectors in conducting and impactful and innovative research.

The data presented in this dissertation indicate that Thailand in general and AU in particular are not realizing their R & D potential. This places Thailand at risk in terms of what has been termed the middle income trap (Gill & Kharas, 2007). Thus, as many countries such as Japan and Korea developed industrial policies, Thailand critically

needs a national research policy to foster excellence in research, particularly quality applied research which will enhance Thailand's national competitiveness and facilitate its escaping the middle income trap. The designation of nine institutions as research universities is a step in the right direction.

Assumption University, a private institution and Thailand's first international university, with its strong Catholic heritage of ethics and teaching and its new world-class campus, has also the potential to strengthen its research profile to enhance even more the quality of its teaching and learning environment. For that goal to become a reality, AU must give higher priority to creating a favorable academic research climate with increased funding and incentives for doing useful impactful research.

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Glossary of Acronyms

ABAC	Assumption Business Administration College (1972-1989)
ARWU	Academic Ranking of World Universities (also known as the Shanghai Ranking)
AU	Assumption University (1990 – present)
CFE	Center for Excellence
ONESQA	The Office for National Education Standards and Quality Assessment
OHEC	Office of Higher Education Commission
OHRM	Office of Human Resource Management
NRC	National Research Council of Thailand
NSTDA	National Science and Technology Development Agency
QA	Quality Assurance
R & D	Research and Development
SAR	Self – Assessment Report
SWOT	Strengths Weaknesses Opportunities and Threats
TCI	Journal Citation Index Center
THE	Times Higher Education
TRF	The Thailand Research Fund
WCU	World Class University

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CHAPTER 1: INTRODUCTION

Today, unprecedented emphasis is being placed on research as the key motor for advancing the knowledge society and its offspring, the knowledge economy. Consequently, *research on the state of research* has moved high on the priority agendas for governments, for their specialized agencies and bodies devoted to this area, and for higher education institutions. (Kearny, 2009. p. I)

Introduction

Many countries have begun to prioritize and commit more resources to higher education, research, and innovation. They do so in order to compete more effectively in the competitive global economy of today. This reallocation of resources varies significantly between high and low-income countries. According to Kearny, industrialized countries have focused most on overcoming two challenges: first, the need to secure sufficient funding for high-level research in post-secondary education; and second, the need to adapt to world-class higher education standards (as cited in Gibbs, 2009).

In contrast to the situation in industrialized countries, middle- and low-income countries begin with a serious problem with respect to research funding, as Kearny has noted. Although the number of universities and colleges is growing rapidly as part of the massification of higher education, many institutions lack resources and efficiency in research activities. The dominant trends in many low-income countries are massification, commercialization, and privatization. The need to assure basic education and health care often takes precedence over higher education and research.

Thailand today is considered to be in the group of middle-income countries, according to the United Nations (2008), and it is poised to "leap frog" in development status under the right circumstances.

Thailand has struggled with a lack of researchers and research funds due to

inadequate R&D investment during the past three decades. According to Sanga and Yongyuth (1984), the research budget of Thailand in 1981 was just 0.36 percent of GNP, which they note “was far lower than the figures of more than 2% for the R&D activities in developed countries like those in the EEC, Japan and the USA” (p. 115). In 1985, Damrong Lathipipat was Minister of Science and Technology and advocated much greater funding for R & D, as critical to the country’s long-term competitive economic future. Unfortunately the cabinet rejected his proposal and in July of that year he committed suicide to show his disappointment and frustration.

In 2010, former Prime Minister Abhisit Vejjajiva announced that the budget for research was still only an extremely low 0.21 percent of GDP. He proclaimed that two problems had resulted from this neglect of R&D funding: an insufficient number of full-time researchers, and inadequate cooperation with the private sector. The number of full-time researchers was only 21,392 in Thailand in 2008, or 3.39 per 10,000 population, and there was little or no connection between the private sector and the researchers themselves (Bangkokbiznews, 2010). Moreover, Dr. Yongyuth Yuthavong addressed the issue of how the number of researchers is further decreased by the problem that many physicists and chemists prefer to work as tutors outside of regular working hours in order to supplement their incomes. Some of them end up abandoning their research fields entirely to go straight into business (Issara Institute Thai Press Development Foundation, 2011).

Dr. Somkit Lertpaithoon has also lamented that governmental support for research in higher education is decreasing. The funding for research at national universities has declined precipitously from two billion to 800 million and then to 400 million baht during the past three years (*Matichon*, 2012). Accordingly, this lack of support directly affects all public universities in Thailand. Meanwhile, Kanyanan

(2010) has shown that the main problem facing research and development at private universities is also the funding. Thus faculty members at public and private universities alike face similar obstacles in finding adequate research funding

One private university that is dealing with the challenges outlined above is Assumption University, which the Ministry of Education highlights as the first international university in Thailand. The following quotation summarizes the history and background of the university:

Assumption University was initially originated from Assumption Commercial College in 1969 as an autonomous Higher Education Institution under the Assumption School of Business. In 1972, with the approval of the Ministry of Education, it was officially established as Assumption Business Administration College or ABAC. In May 1975, the Ministry of University Affairs accredited it. In 1990, it was granted the new status as “Assumption University” by the Ministry of University Affairs. The University is a non-profit institution administered by the Brothers of St. Gabriel, a worldwide Catholic Religious Order. (Center for Excellence, 2008, p.4)

At Assumption University, ten schools comprise undergraduate programs in science, the social sciences, and the professions. These ten schools are: 1) the School of Nursing Science; 2) the School of Science and Technology; 3) the School of Biotechnology; 4) the School of Engineering; 5) the Montfort del Rosario School of Architecture and Design; 6) the Albert Laurence School of Communication Arts; 7) the St. Martin de Tours School of Management and Economics; 8) the School of Law; 9) the School of Arts; and 10) the School of Music (AU, 2008). Furthermore, there are ten graduate school programs. Four of these graduate programs differ from the ten undergraduate schools, such as the Graduate School of Psychology, the Graduate School of English, the Graduate School of Philosophy and Religion, and the Graduate School of Education. The remaining six graduate programs cover the same fields as their undergraduate counterparts: the Graduate School of Business; the Graduate School of Law; the Graduate School of Arts; the Graduate School of

Science and Technology; the Graduate School of Biotechnology; and the Martin de Tours Graduate School of Management (Assumption University, 2009).

Rationale for the Study

The case of one university, in this study Assumption University, can serve as a useful model for analyzing faculty research productivity in Thailand. Such a study is important for two main reasons:

The first reason is that quality research is increasingly crucial to the success of universities in Thailand and to AU in particular. One highly - regarded indicator of such research quality is the annual Academic Ranking of World Universities (ARWU) also known as “the Shanghai Ranking”. Since 2003, the ARWU has published an annual ranking of the world’s top 500 universities based on a set of objective indicators and third-party data. The ARWU uses six key objective indicators in establishing these rankings. Significantly, four out of the six indicators are related to the research performance of the university (2012). The ARWU describes these four indicators as:

...the number of alumni and staff winning Nobel Prizes and Fields Medals, number of Highly Cited Researchers, number of articles published in journals of Nature and Science, number of articles indexed in Science Citation Index - Expanded and Social Sciences Citation Index, and per capita performance. (ARWU, para. 7, 2012)

These ARWCU criteria could be relevant for Assumption University in any effort to improve its faculty research productivity with the goal of obtaining recognition as a world class university

According to the Office for National Education Standards and Quality Assessment (ONESQA, 2006), Assumption University has many senior faculty members including proficient and famous part-time faculty members who devote

their time to their work at AU. However, the ONESQA executive summary notes that at present AU lacks certain academic strengths necessary to qualify as a leading university. It singles out research work as a weak point that AU needs to develop in order to raise academic standards to the world- class level (ONESQA, 2006). Thus far, for example, AU has had no journal that is certified by the Thai Journal Citation Index Center (TCI).

In its own SWOT analysis, research is in an area of current weakness and future opportunity (Assumption University, 2013). It specifies two significant weaknesses. First, AU produces too few research publications and textbooks. And second, it provides insufficient service and resource support to instructors, staff, and students for teaching, learning and research (Assumption University, 2013). Based on this SWOT analysis, AU has placed a high priority on seizing all opportunities to create “research competence complementary of a teaching university” (p. 4).

As a sign of how important this issue has become for AU, in 2007, President Reverend Brother Bancha Saenghiran established a research committee on World Class University Indexes to study the guidelines for future university development. The present analysis of faculty research productivity with Assumption University as a case study can make a further contribution to an understanding of how quality research can help a university reach its full potential as a world class university.

The second reason for the study is that it can provide an example of a university faced with setting priorities between a strong tradition in teaching and the potential benefits of increased productivity in faculty research. As one critic summed up the situation in Thai higher education:

In general, a university has three duties, teach, research and service. In Thailand, we face difficulties related to the research function. Research is not only useful in its application, but it helps the brain to develop new knowledge. If the university faculty members do not exercise their brains in

doing research, they can't expect their students to be able to think.
(Sippanondha, 1992, p. 80)

Meanwhile, Dr. Somwung urges that public institutions put a priority on enhancing teacher awareness of the importance of not just classroom teaching, but also of research excellence. In his view, one of the key factors that can improve teacher quality is to select capable people to become faculty members in the first place and then provide them with adequate training to enhance their skills in teaching and research (*Bangkok Post*, January 19, 2010).

Another problem in the way Thai universities set priorities involves a perhaps excessive focus on the development of physical plant. All too often, including at Assumption University, priorities in educational funding are skewed way from research and toward investment in highly visible concrete “bricks and mortar,” on gorgeous buildings rather than on the improvement of teaching and learning. Assumption University Suvarnabhumi Campus is a world-class campus in terms of luxurious buildings and physical infrastructure but it is not at the same level when it comes to educational quality and research (AU, 2012).

As a former full-time faculty member, I have a concern that research efficiency has not been made a widely known priority at AU, especially the research of faculty members. Most of my colleagues have no interest in doing research. They focus on teaching. And those faculty members who are in fact interested in writing journal articles sometimes complain about lack of support from the university for such endeavors

In sum, this study is concerned primarily with the important role that quality research can play in the overall improvement of the Thai higher education system, and with the necessity of making research excellence a priority at each research university. It concentrates on Assumption University as a case study that can help

identify challenges and opportunities that may be relevant for Thai universities as a whole.

Significance of the Study

Apart from funding, universities in Thailand focus on other issues that may prevent them from achieving progress on research. Studies have been done to analyze this problem in Thai public universities. For example, there was a 2009 study titled “Factors Affecting Research Productivity of Faculty Members in Government universities”, which analyses 300 faculty members from 16 government universities (Sageema, Suchada, & Suwimon, 2009).

However, such a study has yet to be carried out for a private university in Thailand. Thus, a comprehensive analysis of faculty research productivity at a private institution such as Assumption University breaks new ground. It may help to highlight the need to reassess and reform research policies and practices at Assumption University as an example of how best to raise standards in the Thai system of higher education.

Purpose of the study and research questions

Statement of Study Purpose

The purpose of this study is to determine the factors associated with faculty’s perceptions of their roles as researchers at a Thai private university, Assumption.

Major Research Questions:

1. What are the research profiles of faculty members at Assumption?

Questions include gender; percentage of faculty holding a PhD; percentage of faculty above lecturer status.

2. What are their perspectives and views on research?
 - 2.1 What kind of research skills are they lacking or do they need?
 - 2.2 What are the major obstacles they face in doing research?
 - 2.3 What is the research culture at Assumption University?
3. What individual and institutional (school and department level) factors are associated with an individual faculty member's research productivity?

Theoretical and Conceptual Frameworks

This study draws upon several sources to establish a theoretical framework for understanding the various factors and dynamics that affect faculty research in Thailand. It also makes use of several useful metaphors as tools to create a conceptual framework to help clarify the analysis.

Based on the review of related literature, especially the theoretical insights from Paul Krugman (1997) and Ann E. Austin (2007), this study aims to examine the faculty research productivity of one private university, focusing on Assumption University. According to Atagi (2011), teacher learning and innovative research are the key contributors to quality education that can translate into a positive impulse for national productivity.

One of the best descriptions of the crucial importance of research productivity comes from the Nobel Prize winning economist Paul Krugman at Princeton. In Krugman's words, "there are various things government can do that might accelerate productivity growth without political risks, from encouraging higher educational standards to supporting a few industry research consortia" (p.20). Important is his statement that "productivity isn't everything, but in the long run it is almost everything" (Krugman, 1997, p. 9). Krugman (1997) underscores that "productivity growth is the first single most important factor affecting our economic

well-being” (p. 20).

Austin, Gappa and Trice (2007) conceptualizes creating the future of faculty development as ‘rethinking faculty work of higher education’s strategic imperative.’ Her conception involves strategies to support faculty members at different stages of their careers. A significant part of this strategy is to provide opportunities for faculty members to explore their interests through seed grants awarded on the basis of competitive proposals to explore new areas of research or teaching. Another aspect calls for placing research on a par with teaching among ongoing job responsibilities required of all faculty (Austin, Gappa & Trice, 2007).

Given these factors, Kearney (2009) has noted that ‘research for innovation’ and depends on growth in partnerships among government, the economic sector, and higher education in order to link new knowledge to development goals. In addition, Gibbs has pointed out that individuals need to be focused towards better research output. In her words, “Much more time and energy must be put into discovering how to attract people into research and to provide them with optimum conditions for research” (Gibbs, 2009, para. 36).

Another theory that has gained currency in recent years can provide yet another framework for analyzing the role and importance of research productivity in Thailand. In 2007, Gill and Kharas introduced a new concept into international economics: “the middle income trap.” Aspects of this problem were discussed by economist Paul Krugman as early as 1994, and follow-on studies in 2011 by Barry Eichengreen and others further developed the “middle income trap” idea.

These economists ask the question: why do some countries rise to a middle level of economic growth and then continue to make progress in growth and productivity, while other countries reach the same middle point and become stuck, as

if caught in a trap at a somewhat improved level of national income without moving on to higher levels of GDP? The answer, according to the economists cited above, is that many countries begin their development path by relying on inexpensive labor costs based in part on the migration of workers from the countryside to cities. Once a middle level of growth has been attained however, labor costs tend to rise. The initial growth advantages risk being lost as capital moves to other countries where labor costs are lower. At this point, according to the theory, new sources of growth must be found to allow economic progress to continue. In this evolution, it becomes essential to invest in human capital, research and development and institutional reform in order to improve productivity and move on to a modern economy that can compete internationally.

Thailand enjoyed an annual growth rate as high as 8.4 percent in the years before the Asian economic crisis of 1997. But since 2000, its annual growth rate has fallen to 4.1 (Peter Warr, East Asia Forum, December 18, 2011). Thus, for many economists, Thailand today is an example of a country that has fallen into the middle income trap.

Thai experts have begun to focus more on the implications of the middle income trap theory for Thailand. Improved research and development is widely seen as an important component of the debate. For this reason, the obstacles and tradeoffs involved in improving research quality and productivity in Thailand do indeed merit close scrutiny.

Thai educational policy has focused on the quantity of Thai education at the lower levels, rather than on quality of higher education, in the opinion of analysts such as Pornthep Denyaepkul, lecturer at Thammasat University. In that regard, Pasuk Phongpaichit, professor emeritus at Chulalongkorn University, has recently

stressed the need to begin doing more for quality research and education (*Bangkok Post*, January 15, 2014).

In recent years, new concepts have been developed that seek to create a framework for mobilizing and maximizing national resources for growth and innovation. One such concept, which stresses the importance of university research, is the “triple helix” model.

Introduced in the 1990s by Henry Etzkowitz of Stanford University and Loet Leydesdorff of the University of Amsterdam. The triple helix concept focuses on the relationship among government, private industry, and universities. It argues that by fostering cooperation among this triad of institutions, countries can inspire more dynamic innovation and begin the transition toward a “knowledge society.” As the Stanford Triple Helix Research Group points out:

The increase of interactions among the institutions has had the effect of generating new structures within each of them, such as centers in universities or strategic alliances among companies. These interactions have also led to the creation of integrating mechanisms among the spheres in the form of networks, e.g. of academic, industrial and governmental researchers, and hybrid organizations such as incubator facilities. (Etzkowitz & Leydesdorff, 1996, para. 8)

Three potential variants of the triple helix have been analyzed: first, the “statist” model, in which government has the strongest role; second, the “laissez faire” model, where the role of government is weaker than that of the private sector; and, finally, a “balanced” model with roughly equal roles for government, industry, and the university. This third “balanced” paradigm is considered optimal for countries seeking to increase research and innovation (Etzkowitz & Leydesdorff, 2000).

One important implication of the triple helix concept is that it argues for broadening the role of the university in national development. Thus, in addition to its

traditional priorities of teaching and research, the university should incorporate a third important goal, that of contributing to the socio-economic development of the nation through active participation in the triple helix.

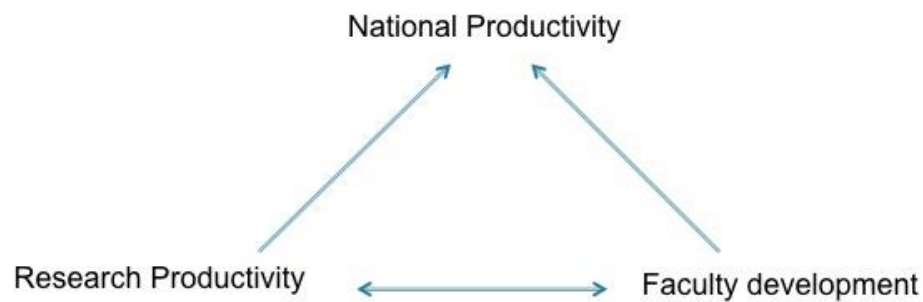


Figure 1. Sources of National Productivity

Figure 1 presents the triangle model of the conceptual framework for this study. The bases of the triangle are the two main contexts: faculty development, and research productivity. In this model, faculty development leads to research productivity. Research productivity can then contribute to national productivity.

Reform of research in higher education will require changes in several areas, both at the level of government and university policy and at the level of faculty performance and motivation. As a conceptual framework for analyzing the interaction between these levels under effective reform, rational choice theory appears potentially useful. As initially developed by Nobel Prize winner Gary Becker and further elaborated by George Homans and Peter Blau, the theory of rational choice takes as its basic premise that individuals will naturally act in their own self-interest to balance costs against benefits to arrive at a “rational” choice. Larger social structures are thus seen as resulting from an accumulation of such rational individual choices.

Indeed, rational choice theory is often criticized as too “individualistic” in its focus. But it does provide a framework for analyzing how cost – benefit choices at the university level can optimally affect cost – benefit calculations at the level of individual researchers and faculty. Such an analysis will further rely on an application of exchange theory, which has developed alongside rational choice theory.

Rational choice theorists see social interaction as a process of social exchange. “Rewards and punishments” in social exchange are often referred to as “rewards and costs,” with action being motivated by the pursuit of a 'profitable' balance of rewards over costs.

The concept of social exchange raises the issue of social factors as they apply to research productivity. To analyze such factors as individual motivation, institutional structures, and traditional research culture in Thailand, a broad methodological framework seems in order. In recent decades, a large body of theoretical research has emerged that goes beyond the economic and institutional dimension to add “social capital” to the methodology of social analysis. The leading theorists in this approach are James S. Coleman from Chicago, Pierre Bourdieu in France, and Robert Putnam at Harvard University.

James S. Coleman sets out this broader approach in his influential essay “Social Capital and the Creation of Human Capital” (1988; cf. Clark, 1996). He notes that there are two “intellectual streams” in the analysis of social action. One stream sees people as independent actors motivated primarily by individual self-interest and strategies to maximize utility. This conceptual framework underlies much of rational choice theory. The second stream “sees the actor as socialized and action as governed by social norms, rules and obligations” (Coleman, 1988, p. 95).

This second framework, Coleman asserts, has influenced sociological studies that seek to explain individual actions in a social context.

Coleman (1988) develops a definition of “social capital” describing it “as one way of introducing social structures into the rational action paradigm” (p. 95). To analyze research productivity in the context of Thai culture and tradition, Coleman’s idea of social capital can be a useful tool of analysis, as will be spelled out later in this study.

Pierre Bourdieu further elaborated the concept of social capital in his writings, expanding it to explain how actors use different “strategies and dispositions” to pursue specific “stakes” within a given “field.” Here a “field” is defined as a given domain of practice, such as higher education. Based on specific socio-cultural norms that Bourdieu called “habitus,” actors maximize these broader tools of social capital, often unconsciously. Thus it is crucial to understand the cultural and symbolic basis of any given “habitus.” In our study, this habitus amounts to the norms and traditions of Thai culture as they impact the field of higher education in Thailand and pose potential obstacles research productivity.

Finally, Robert Putnam (2000) stresses the importance of social capital to any society and laments its demise in the United States. He makes an important distinction between two types of social capital: bonding capital, and bridging capital. Bonding capital exists within homogeneous groups, bringing them together and establishing fixed norms. Bridging capital exists between heterogeneous groups, bridging differences and creating networks between and among different sectors and ethnic groups. Traditional Thai society is characterized by strong “bonding” capital; indeed, some analysts included in our research characterize Thailand as an “affiliative” society. Yet, to develop Thai research productivity to a level of global

quality, it may well be necessary to promote greater “bridging” capital, both within Thailand and between Thailand and other countries.

Definition of Terms

Productivity

This study will incorporate two definitions of productivity.

1. “Productivity refers to the way in which a firm transforms inputs (e.g. labor and capital) into outputs” (Layzell, 1996, p.269).
2. “Productivity will refer to an increase in educational outcomes (for example, more students served, improved instructional outcomes, a more valued mix of services) relative to costs, or lower costs for a given set of educational outcomes” (Levin, 1991, p. 242).

Research Productivity

The assessment of research productivity has been based on the number of research publications in high quality journals as well as the level and consistency of research funding acquired from competitive sources (Bloedel, 2001).

AU full-time faculty members

Professors, associate professors, assistant professors, and lecturers whose duties are mainly in teaching, research or other assignments that AU may stipulate (OHRM, 2006).

The genres of research

The following observations are relevant to any definitions of research genres in higher education. As Chandler points out, “Conventional definitions of genre tend to be based on the notion that they constitute particular conventions of content (such as themes or settings) and/or form (including structure and style) which are shared by

the texts which are regarded as belonging to them” (1997, p. 2). Meanwhile, Creswell argues that research in higher education must follow the norms of a given discipline or field of study, and paradigms vary across disciplines (1985). Williams defines research as “basic” when there is no particular application in view, and as “applied” when there is (1992, p. 853). Charles Lindblom (1979) at Yale emphasizes the production of *usable knowledge* while Chris Argyris (1980) at Harvard stresses the need to study real organizations in field settings and is highly critical of much “rigorous” research as being irrelevant because it is so abstracted from reality (see also Baran, 1957).

Limitations

Since this study aims to understand the situation of faculty research productivity at one international private university, its limitation is that it is just one case study that is not necessarily totally applicable to other universities. In addition, being professionally associated with the university in question requires remaining on guard at all times against any latent biases or preconceptions. Also, assuring a diverse sampling is somewhat limited by the fact that all faculty members at Assumption, which is a Catholic university, are subject to the same institutional and bureaucratic context and the same sociocultural context.

Conclusion

As noted above in Figure 1, Thailand’s national productivity is dependent on its R and D capabilities. Krugman argues in turn that a nation’s future economic well-being is related to its improvements in productivity. This study is a detailed case study of a major private university in Thailand, which is also Thailand’s first

international university. Its focus is on the research role of faculty members and their productivity.

Several theoretical and conceptual frameworks are used in the study, namely, capital theory, rational choice theory, and the triple helix model. Hopefully the study results will inform theory, policy, and practice related to enhancing the knowledge discovery mission of Assumption University. It may also have broader implications for Thailand and the role of its higher education system in helping Thailand to escape the middle-income trap.

The next chapter examines critically key bodies of scholarly literature related to the research role of faculty in general and Thailand in particular.

CHAPTER 2: REVIEW OF LITERATURE

Introduction

The dominant aspiration of present social science research is to state as precisely as possible the invariant relationships between, or among, a specified set of variables. Precision is to be achieved primarily through the use of quantitative methods. In many cases, the type of quantification used tends to distance the researcher and the subjects from the reality to which the propositions are supposed to apply. (Argyris, 1980, p. 182)

Three major bodies of literature inform my basic thesis questions. First is the review of factors that influence faculty research productivity, divided into two main categories, individual and institutional. Second are the genres of research, including a critique of the usefulness of research in different fields. Finally there is an examination of the situation of research in higher education in contemporary Thailand. In addition, a brief history of research in higher education is provided as important background for the subsequent literature review.

A Brief History of Research in Higher Education

According to Ben- David, the concept of research and teaching has been remarkably unified since antiquity. In his words:

Institutions of higher education have been seats of research since ancient times. Plato and Aristotle combined teaching and research in a way that would be considered exemplary even today, as did most of the great scholars of the Middle Ages. (as cited in Gellert, 1992, p. 1635)

“Unity of research and teaching,” is the concept that should guide university faculty members as they engage in research, according to Gellert (1992). In his view, teachers should not only teach, but must also link their academic endeavor to the ongoing process of general research: “The profound consequences of academic research activities of the teacher can support, enhance the matter of their teaching”

(Gellert, 1992, p. 1636). He notes that the first country to institutionalize the concept of “unity of research and teaching” was Germany. The practice was instituted at the University of Berlin around the year 1810 and later spread to England and the United States (Gellert, 1992). As this unity progressively became commonplace among universities around the world, quality research in particular became a dominant criterion for determining academic excellence. Gellert asserts:

Among the university functions, which exist in practically all university systems, those of professional training and research are clearly the most important ones. While in terms of the time which faculty members spend professionally, teaching is often named as the most absorbing, activity faculty research is what clearly determines the individual esteem of a faculty member as well as the prestige and quality assessment of a department and even an entire institution of higher education. (Gellert, 1992, p.1640)

On the basis of the preceding review of the relevant literature, this study continues with the factors that are considered to be significant in influencing the research productivity of faculty members.

Individual Faculty Productivity Factors

In early studies, individual factors influencing faculty productivity were found to be age, gender, socioeconomic status, and educational background (Dundar & Lewis, 1998). Since the 1970s, gender studies of published papers have revealed that women produce one half to two-thirds fewer publications in terms of journal articles than males (Creamer, 1998). According to Finkelstein (1987), one reason why women are sometimes disadvantaged in the academic profession derives from the fact that their publication rate is often lower than that of their male colleagues. In the 1990s, Vasil (1996) opined that females have less confidence for research tasks than their male counterparts. Findings from a study by a medical group of

researchers indicate that faculty research productivity is not correlated with age, but may be influenced by gender. (Bland, Center, Finstad, Risbey & Staples, 2005). However, Chen, Gupta & Hoshower (2006) reported from their research that the gender factors was not significant. Similarly, Bland, Center, Finstad, Risbey & Staples (2005), noted, “We found male faculty published more than females, but this difference was eliminated when the density of female faculty in lower ranks was taken into account. Thus, in the present study, we found no difference in productivity due to gender when rank is controlled” (p. 229). In the view of Dundar and Lewis (1998), as age and experience increase, productivity also increases up to a point and then appears to level off. Creswell (1985) cited the potential importance of age as a factor in research performance, but qualified this by noting: “The precise relationship between age and research productivity is difficult to determine because of complex measurement and other methodological problems” (p. 31).

According to Baldwin and Blackburn (1981), the age factor is conditioned by academic rank and years of experience. Bland, Center, Finstad, Risbey & Staples (2005) analyze academic rank - full professor, associate professor, and assistant professor - and conclude that this factor can explain significant variations in research productivity. In their view, high research productivity in faculty of higher rank is logical (Bland, Center, Finstad, Risbey & Staples, 2005). Along these lines, Creswell, Patterson, and Fames (2000) found that faculty members of higher rank are more likely to produce research than those of lower rank. Hu & Gill (2000) concluded that research productivity often increases dramatically at the beginning of a period of tenure evaluation, and then begins to drop off.

Hu and Gill (2000) explain that research productivity among pre-tenure faculty is controlled by investment factors, while post-tenure productivity is

influenced by consumption factors. Consistent with Hu and Gill's study, the report of Chen, Gupta & Hoshower (2006) found that investment and consumption factors influence personal motivation. They categorized motivational factors as extrinsic and intrinsic. Investment factors are extrinsic rewards, such as income increases and tenure promotion. Consumption factors are intrinsic rewards, which include personal satisfaction and the recognition of colleagues (Chen, Gupta & Hoshower, 2006). Employing the same categories, Creswell (1985) concluded that faculty members were more intrinsically motivated than extrinsically motivated to produce research. However, as Bland, Center, Finstad, Risbey & Staples (2005) have noted, "motivation cannot result in research productivity without many supportive characteristics found in the institution" (p. 236).

Beyond the aforementioned individual attributes of faculty research including productivity, gender, age, academic rank, and motivation, Dundar and Lewis (1998) add an additional dimension when they state: "Individual attributes have been related to environmental location, including quality of graduate training, prestige of employing department or institution, communication networks, and freedom in the workplace" (p. 610).

Institutional Factors Influencing Faculty Productivity

Along with individual factors, institutional aspects have a significant influence on faculty productivity.

Dundar and Lewis (1998) argue, "institutions play a significant role in determining both individual and departmental productivity" (p. 613). Creswell (1985) divides the correlates of faculty productivity into "ascriptive (givens),

individually controlled, and institutionally controlled factors to provide practical strategies to improve faculty research performance” (p. 46).

Many commentators stress the need for faculty time allocation that keeps research hours separate from teaching hours (Creswell, 1985). Webber (2011), for one, warns that the faculty time balance between teaching and research is very important. He advises academic planners to “maintain a careful balance in addressing institutional fiscal needs, both through research as well as instruction” (Webber, 2011, p. 42). If the research and the teaching are not in balance, then neither may be productive.

For Creswell, “adequate computer time, research assistants, and secretarial services are other valuable resources in a productive research career” (1985, p. 50). According to Dundar and Lewis (1998), the critical institutional resource is campus libraries. This factor is closely related to departmental research productivity in all cases, with the exception of engineering and the social sciences (Dundar & Lewis, 1998). According to Webber (2011), productive research requires adequate resource allocation, for example, additional equipment, physical space and additional staff.

Indeed, the higher the allocation of funds, the greater the productivity of research. The two variables are significantly related (Webber, 2011). Similarly, the findings of Dundar and Lewis (1998) suggest that departmental financial support for research is closely related to research productivity.

In the view of Frankenberg (2000), in the future universities will increasingly develop varied approaches to research, relying on specific individual profiles that take into account the cost of research and development, education and training. Bland, Center, Finstad, Risbey & Staples (2005) put mentoring at the center of institutional factors influencing research productivity. They stress the value of junior

faculty members profiting from the guidance of an advisor or mentor. Departments should assign specific mentors and provide faculty members with useful research guidance that will help them to understand what is expected of them for promotion. Such mentoring can also assist faculty members to better formulate their own academic career goals (Bland, Center, Finstad, Risbey & Staples, 2005).

Ingalls (1982) provides an example of how reforming a research program led to an increase in faculty productivity at one university in Canada. The program included the following elements: the creation of an office of research administration and the appointment of a director of research and publications; the creation of a presidential committee to make recommendations on research policy and the allocation of internally funded research grants; the implementation of hiring policies intended to recruit and retain faculty with either a proven record of research productivity or the potential to develop a research program; the allocation of funds from the university's operating budget to provide seed money to support the research of promising scholars; the establishment of a faculty research seminar; the allocation of faculty travel funds on a priority basis to those attending conferences to present their research findings; and the creation of a program of sabbatical leave grants (Ingalls, 1982, p. 60-61).

As shown above, individual and institutional factors appear to influence the faculty research productivity of higher education internationally. It is thus quite likely that the same factors perform similar functions in faculty research productivity at Assumption University, Thailand.

The Genres of Research

Research Related to the Nature of the Field/Discipline

In analyzing the factors that contribute to quality research, it is necessary to

take into account differences among the various fields of academic research.

According to Clark and Neave (1992), academic disciplines and indexes of higher education are divided into five main domains. The first is humanities; second is social sciences; third is biological sciences; fourth is medical sciences; and fifth is physical sciences. Professional schools are those such as a law, business, education, medicine, and pharmacy (Graduate and Professional Schools, 2013).

Creswell (1985) has stated, “The norms of a discipline (or field of study), as well as scientific knowledge in the discipline, partially explain variations in faculty research performance” (p. 23). Each field varies in its stage of paradigmatic development. As Creswell explained, “Disciplines are in different paradigmatic stages. Social sciences (e.g., political science) are immature fields and are considered to be in a pre-paradigmatic stage. The physical sciences (e.g., physics) are mature fields and in a paradigmatic stage” (Cresswell, 1985, p. 24). The paradigmatic stage of a discipline may positively affect scholarly research (Lodahl and Gordon, 1972). In the view of Gaston (1978), this paradigmatic stage has an effect on the approval rates in academic journals; for instance, physics is the field that enjoys particularly high acceptance rates (Gaston, 1978).

According to the Royal Society (2011), “science” is defined as “natural knowledge,” which comprises the natural sciences, mathematics and engineering. Based on statistics released by UNESCO and published by the Royal Society, the approximate number of published science research articles in 2011 was 25,000. In contrast, these statistics indicate that research in the social sciences, arts and humanities resulted in a “very small” 8.9 percent of total research publications (the Royal Society, 2011).

In the view of Frankenberg (2000), the present era of globalized knowledge in science, economics and social sciences has caused institutions of higher education take on even greater importance as a part of the 'cultural heritage' of a country. He emphasizes however, that such national institutions "have to be engaged not only in narrow, specialized fields, but in sciences in a broad sense, including humanities and social sciences, in order to avoid the announced 'clash of civilizations' (Samuel P Huntington) and to cope with the challenges of society" (p. 59).

Basic versus Applied Research

Williams (1992) provides a clear description of the distinction between basic and applied research:

Research - original investigation undertaken to acquire new knowledge - is defined as "basic" when there is no particular application in view, and as "applied" when there is. When a scientist or businessperson notices that the results of basic research may have some practical applications, the basic research is followed by applied research. The results of applied research may lead to new or improved products or methods of production (innovations), though often only after further expenditure on development to build pilot plants or to test market for a new product. (p. 853)

According to the Organization for Economic Co-operation and Development (OECD), the components of R&D are classified under three categories: basic research, applied research, and experimental development (as cited in Williams, 1992). Basic research is "experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts without any particular application or use in view." Applied research is the search for new knowledge directed "primarily towards practical aims or objectives" (OECD as cited in Williams, 1992). The third type of R&D, or experimental development, is described as "systematic work driving an existing knowledge gained from research and practical experience that is directed towards producing new

materials, products or devices, to installing new processes, or to improving substantially those already produced or installed” (OECD as cited in Williams, 1992, p. 856).

In its report, the OECD showed that in the mid-1980s, the United States and Japan spent around 12 percent of their R&D funding on basic research, 24 percent on applied research, and 64 percent on development. Similarly, investment by the business sector on basic research broke down as follows: roughly 5 percent on basic research, 20 percent on applied research and 75 percent on development. In stark contrast, investment by the higher education sector was a striking 65 percent in basic research, 30 percent in applied research, and a meager 5 percent in development (OECD as cited in Williams, 1992).

According to Williams (1992), trends in the economy can affect the relative priority assigned to the three principal areas of research. In times of economic recession the priority often shifts to applied research to speed up strategic industrial applications. Williams illustrates the tendency as follows:

Most institutions of higher education with significant research activities reacted to the effects of the economic recession on the budgetary position of government and to the changed perception of governments and business companies on the types of research projects that were worthy of support. But their responses were not purely reactive. (p. 858)

Indeed, Williams (1992) describes how the US and Japan, for example, continued to support applied research during the economic downturn. As a result, applied research grew relative to basic research. William also points out that many companies in the business sector provide financial support for basic university research as part of their primary focus on research applications. In his words, “A considerable part of the financial support from the business sector comes from companies that use a small proportion of their research budgets to encourage basic

research in universities where they expect to make their own applied research more productive” (Williams, 1992, p. 858).

The experience of other countries can help illuminate alternative approaches to research productivity. In this regard, the example of China and Japan are of particular relevance. A study by Shilie and Yu (2000) reported that in 1997, 757 colleges and universities in China had 600,000 personnel involved in research activities. This number was 24% of the total researchers in China. According to Shilie and Yu, China plans to prioritize the development of basic research in its universities because it sees great potential in the integration of research with higher education along with greater interaction between scientists and young students (Shilie & Yu, 2000). Shilie and Yu (2000) noted that the Ministry of Education of China has announced that any research project deemed relevant to sustaining and developing the Chinese economy will be given strong government support. In this way, the Chinese Ministry of Education proactively sets national objectives and influences the motivations of scientists. The Ministry of Education has also signaled that the allocation of government funding should be improved on the basis of an “open,” “fair” and “equitable” management process. The goal is to motivate scientists through a transparent, bottom-up approach. In general, the system of scientific research should be reformed to create synergy between scientific research and higher education (Shilie & Yu, 2000).

Germany has three organizations devoted to research support (Spath, 2000). First, a public funding organization for academic research in universities and public research institutions named Deutsche Forschungsgemeinschaft (DFG). Second, a non-profit organization that works on basic research, especially in the fields of natural science and social science. This organization is called The Max Planck

Society. And third, the Fraunhofer Gesellschaft, the leading organization of applied research in Germany, which operates 47 separate research institutes (Spath, 2000). Significantly, Spath (2000) highlights the fact that Chinese and German scientists have begun cooperating effectively on bilateral research projects under the Sino-German Center for Research Promotion (ChiWi).

The Quantity vs. the Quality of Research

According to a Global Sherpa (2011) study of the current rates of publications worldwide, the quantity of scientific published papers has increased significantly in recent years. A milestone was passed when the number of research publications in China surpassed the number published in the US (Global Sherpa, 2011). At the same time, however, the number of citations of Chinese publications remains far less than those of the US. From 2004-2008, US research publications accounted for 21 per cent of the world total, while receiving 30 percent of all citations globally. The US thus ranked first in citations, while China lagged behind in ninth place.

Global Sherpa (2011) emphasized that citations tend to indicate the quality of a given article or publication and that it is important to keep in mind that the value of global science research is based more on the quality than on the quantity of scientific publications. Nevertheless, Global Sherpa (2011) pointed out that developing countries such as China may receive fewer citations simply because they may not be as familiar as developed countries to the international research community.

Quality Indicators in the Humanities

The issues outlined above apply not just to research in the hard sciences, but

to academic research and output in the humanities as well. Factors such as diversity of cultural contexts and culture of publishing are particularly relevant in the human sciences, especially in an era of globalization in which research and target audiences are increasingly international. Because academic publications in languages other than English impact all fields today, research parameters and bibliographic databases must be rigorously expanded accordingly. Also, in light of the proliferation of new media and the increasing importance of online education, databases must be expanded to embrace the entire scope of contemporary research. Ideally, data systems will be developed with sufficient flexibility to account for the diverse indicators and even cultural contexts of research conducted in many nations.

The humanities require a fairly wide range of quality indicators that can do justice to the diversity of products, target groups, and publishing cultures present within this field. Fair consideration needs to be given to monographs and to international publications in languages other than English, which means that primacy cannot be accorded to bibliometric indicators that are as yet still based on databases consisting primarily of English-language publications. The system must also offer scope for other types of output than just scholarly publications, for example databases, catalogues, and editions of texts. As pointed out in a report by the Royal Netherlands Academy of Arts and Sciences (2011):

The system needs to be as broad as scholarly practice demands, but at the same time sufficiently flexible to enable a tailor-made approach in various contexts. By emphasizing the importance of a flexible system with the option of including context-specific indicators – related to the specific character of a given discipline or the mission of a given institute. (p. 11)

Meanwhile, China is emerging as a major contributor to scientific research. According to a recent study by London's Royal Society, China already produces the second highest number of scientific research papers globally. The study predicts that

China may become the top producer of scientific research as early as 2020.

Bauerlein, Gad-el-Hak, Grody, McKelvey and Trimble (2010) describe how the rapidly- increasing quantity of academic research threatens to overwhelm research quality. They point out that the number of scholarly research publications has been growing at the rate of over three per cent per year, which would lead to a doubling every twenty years also. This increase is due in part to rising numbers of research scholars in developing countries, such as China and India, now publishing in English. Bauerlein, Gad-el-Hak, Grody & McKelvey & Trimble (2010) note that only 45 percent of the articles published in the 4,500 top scientific journals were cited within the first five years after publication. In addition, as the speed of publication accelerates, projects are encouraged that do not require extensive, time-consuming inquiry and evidence gathering.

There are many other factors that contribute to inadequate research. For example, when tasked with assessing research results and promotion files, experts all too often give the subject matter short shrift or even hand the assignment over to less experienced peers. It is a common practice in many universities for professors to turn to Ph. D. students for assistance in monitoring research. In this way, substandard work is allowed to enter the mainstream of academic research. Slipshod review procedures also contribute to the accelerated pace of modern research, leading to the general impression that only the most recent research is relevant. More established findings are often neglected or simply reworked into new projects as younger researchers respond to the demands of the publish-or- perish culture of many universities and risk losing sight of the higher ideals of academe.

For scientific research to prosper and remain strong, it is essential that a rigorous culture of peer review be constantly encouraged so that key scientific findings are not overwhelmed by a *tsunami* of rushed and mediocre research.

To develop a deeper understanding of this issue, it will be necessary to reconsider the existing pattern of incentives that characterizes the research culture of many academic institutions. Those who administer programs and award research grants should focus less on monetary considerations or publication quotas and more on the quality of research being conducted. In addition, university libraries should set a higher standard for acquisition in order to reduce the number of second-rate and less influential journal and publications. In general terms, quality should take clear precedence over excessive quantity.

Measures of Research in Faculty Evaluation Studies

In his study on measures of research in faculty evaluation, Creswell (1985) compared the combined studies of Centra and Seldin with those of Jauch and Glueck. In Jauch and Glueck (1975), quantitative measures included numbers of papers, books and technical reports published, along with the number of papers presented at professional meetings (as cited in Creswell, 1985). Meanwhile, the research of Centra and Seldin, employed such measures as faculty evaluation of publications in all professional journals; papers at professional meetings; books, sole or senior author; books, junior author or editor; monographs or chapters in books; grants or funding received; unpublished papers or reports (as cited in Creswell, 1985).

Turning to qualitative measures, Jauch and Glueck (1975) considered the index of journal quality; citations to published materials; success rate of proposals for research support (as cited in Creswell, 1985, p. 54). Similarly, the research of

Centra and Seldin counted articles in quality journals and citations of published materials (as cited in Creswell, 1985).

Useful vs. Useless Research

In any effort to improve the quality of faculty social research, some considerations must be given to the relative usefulness of the research in question. For Argyris, “The purpose of basic research in action science is to produce knowledge that helps people in their face-to-face relationship to discover, invent and produce actions under on-line conditions” (Argyris, 1980, p. 177). In his view, three conditions must be present in order to improve the usefulness and applicability of research in the social sciences. First, great attentiveness must be devoted to the observation of every day life’s activities in order to deeply comprehend the ‘ecological context’ within which ‘human action’ takes place (Argyris, 1980). Secondly, there must be a viable theory. And finally, rigorous methodology must guarantee that research results are reliable (Argyris, 1980). He concludes that the research in the action sciences consists of a study of “our practical world” and of “the actions people take in the conduct of everyday life” (Argyris, 1980, p.177). Argyris especially warns against the danger that:

The methodology of rigorous research developed to enhance the internal validity of the knowledge produced may not only detract from its external validity but may also detract from its internal validity. (1980, p.ix)

Here Sokal and Bricmont (1998) wholeheartedly agree. Indeed, they express the fear that much overly abstract postmodern research seems to have a questionable link to reality.

An example of research that may be insufficiently useful is the new evaluation “Report Card” of 54 American and Canadian research universities assessing their contributions to “urgent global health” (Blumenstyk, 2013). Of the 54

research universities under consideration, only six receive grades that are above average, and only one receives an A, the University of British Columbia. And the evaluations reveal that twenty institutions received a D plus or lower.

The report notes that less than three percent of the research money at the 54 institutions was devoted to diseases related to urgent global health, and just over 2 percent of grants for training programs were focused on serious neglected diseases. Thus, the report raises a number of pointed questions. How much were the universities investing in innovative research to help neglected health needs of poor communities around the world? When commercializing their innovations, were they ensuring that new treatment would remain available and affordable in the developing world? And what efforts were they making to provide educational opportunities to interested students? (Blumenstyk, 2013)

This section concludes with a positive example of useful research, the success of applied research in the University of Minnesota apple-breeding program. According to Feuerherm, the U of M is breeding three types of apples, Honeycrisp, Zestar and SweetTangle (2009). Honeycrisp has great texture, whereas Zestar has a full sweet flavor. Building upon a concerted effort in applied agricultural research, the university has recently succeeded in developing the SweetTangle apple combining the two different apple genes, Zestar and Honeycrisp (Feuerherm, 2009).

The Situation in Thailand

Historically, Thailand has witnessed four reform efforts aimed primarily at general education and increasing public access to education. The first came during the reign of King Chulalongkorn or King Rama V in 1868. The second occurred in 1973 in response to student protest. The third reform resulted from the Asian

currency crisis in 1997. And finally, the most recent reform effort was announced in 2009 by the Abhisit government and has been continued by the Yingluck government. As was the case with its predecessors, the current reform has focused on the level of general education rather than on the quality of research in higher education (Fry & Bi, 2013).

According to Dr. Sippanondha (1992), Thailand faces many challenges in scientific research. For example, equipment, instruments, and laboratories are quite expensive. This fact contributes to a widespread preference for applied scientific fields such as engineering which entail fewer costs. Basic science is not as attractive. In addition, faculty members in Thailand continue to face challenges in research because their main academic responsibility is teaching rather than research.

Sippanondha (1992) has pointed to the ideal duties of higher education in Thailand:

The university has three crucial duties. First is teaching. Accumulated knowledge must be transferred from the past to the present. College students must be able to practice and think. Second is new knowledge, which has to be scientifically supported by other academics in the world. At the same time, this knowledge can be a valuable treasure to the new generation. Third is social service. The university is the center of academics and the center of social culture. It must serve the transmission of knowledge and freedom for thoughts, which are useful to the community in the nation and the globe. (p. 79-80)

Sippanondha (1992) lamented that faculty in Thailand do not have enough staff and facilities to support their research. This situation has caused research opportunities to be missed and has negatively affected the time available for research.

Wojcik and Yongyuth (1997) emphasize, “Universities by far are the most prominent performers of scientific research” (p. 26). They argue that Thai higher education needs to create programs that transcend the national level and allow Thai students and professionals to conduct R&D of international quality. Thus, it will be

essential to promote stable internationalization of the Thai higher education system (Wojcik & Yongyuth, 1997). As matters stand today, industrial firms in the private sector tend to doubt the ability and effectiveness of universities and public technical institutes to solve practical industrial problems” (Yongyuth, 1997, p. 34).

Chularat and Wannapa have written that, “in order to improve Thailand's competitiveness and improve the quality of its education, research is needed” (2013). However, they note, “There is a shortage of qualified people to conduct this research.” Kajorn explains that there are more students enrolled in doctoral programs than ever, but a higher number of students are needed in specialized fields to conduct research (2013). At present, there is a shortage of doctorates in science, technology and education. As Associate Professor Amorn Petsom, dean of graduate school at Chulalongkorn University (CU) points out; "Thailand lacks doctorate-degree holders in the areas of science, technology and education. More doctorate holders are needed in these subjects as Thailand needs to develop its science and technology to become more competitive," (as cited in Chularat & Wannapa, 2013).

In the future, Thailand will need to rethink its priorities on education spending. Indonesia provides a positive example of a country in the ASEAN region that is increasing its R & D funding and national productivity. Thailand must also find a way to bolster professor salaries and eliminate unnecessary bureaucracy that is not central to quality teaching (Fry & Bi, 2013).

According to Professor Dr. Yongyuth Yuthavong (2011), one significant issue that has confronted research in Thailand for decades is insufficient funding. Although every government administration has promised that 1% of GDP will be dedicated to research and development, the research budget in fact has languished at 0.2% of GDP for nearly three decades. Beyond this, the number of researchers in

Thailand amounts to 600 per one million inhabitants, the lowest ratio in the world (2011). Consequently, Yongyuth (2011) believes that it will be imperative to alter the popular mindset. The government will also have to step up significantly its support for higher education in Thailand (Issara Institute Thai Press Development Foundation, 2011).

Organizations that have been established to support Thai research include the National Science and Technology Development Agency (NSTDA), the Thailand Research Fund (TRF), the National Research Council of Thailand (NRC), and the Office of Higher Education Commission (OHEC). Unfortunately, the activities of these organizations in support of research are severely limited by budgetary constraints. Dr. Somkit has warned that the government's support for research in higher education is actually decreasing. Indeed, the funding for national research at the university level has declined from two billion Thai baht annually to 400 million Thai baht during the last three years (*Matichon*, 2012). Most of these reduced funds would have gone to schools engaged in scientific research, such as Mahidol University, biological medicine; Chulalongkorn University, physical sciences; Chiang Mai University, life sciences; Kasetsart University, agriculture; King Mongkut's Institute of Technology Ladkrabang (KMITL), engineering; King Mongkut's University of Technology Thonburi, engineering and biological sciences; and Thammasat University, engineering (Wannapa, 2009).

Public universities in Thailand increasingly complain that the government is not doing enough to support them in research. Meanwhile, as Kanyanan has pointed out, Thai private universities also suffer from inadequate funding, and faculty member at private institutions frequently call for an increase in research funding (2010). Indeed, a crisis in research funding confronts public and private universities

alike (Wannapa, 2009).

According to the research of Sageemas, Suchada and Suwimon (2009), the average faculty member in government universities in Thailand produces only 0.4 papers per year. As they note:

The past research policy of the concerned organizations such as the Commission on Higher Education, the Office for National Education and Quality (ONESQA), the Thailand Research Fund (TRF) and universities' policy did not stimulate enough research productivity. (Sageemas, Suchada & Suwimon, 2009, p. 76)

Observing that personal characteristics and research competence are both closely related to research productivity, Sageemas, Suchada and Suwimon (2009) assign a greater role to research competence rather than the researcher's personal characteristics in the production of quality research. Research competence includes such factors as research skills and techniques, funding skills, research management, research communication skills and networking and teamwork skills. Institutional support for research work can help build upon research competence to create a solid basis for quality research (Sageemas, Suchada & Suwimon, 2009, p. 76). In particular, well-funded programs to assist junior faculty members to develop strong research skills can be crucial (Sageemas, Suchada & Suwimon, 2009).

According to the Royal Society (2011), any country that employs English as a second language risks facing more problems in the peer review process and in attracting research interest from other countries. Research published in non-English publications is termed "gray research" (The Royal Society, 2011). Many developing countries for whom research in agriculture or food security is a national priority necessarily end up conducting a large amount of gray research (The Royal Society, 2011). And, since Thai government universities do not use English in lectures, Thai researchers have difficulty competing with their international counterparts in the

quality and quantity of research publications.

Leadership for Change

Kent D. Peterson and Terrence E. Deal share Fullan's outlook. They echo Pierre Bourdieu's theory of "habitus" when they describe the "culture" of any institution as "the underground stream of norms, values, beliefs, traditions, and rituals that has built up over time as people work together, solve problems, and confront challenges" (Peterson & Deal, 1998, p. 28). A leader must "read the culture" of the institution and articulate clearly the "core values and shared purpose" on which change is to be based.

In line with these theories of educational leadership, it could be appropriate for leaders at Assumption University to conceptualize new policies on research in terms of moral purpose and values. Quality research can benefit teaching by providing new opportunities for students as well as mentors and role models. This in turn can help students to engage in meaningful research that contributes to society and the nation. Such goals are easily framed as in harmony with Assumption University's longstanding commitment to teaching and moral contribution to society.

Another common theme in contemporary research on educational reform is the importance of improving conditions for instructors. Philip Hallinger formerly of Mahidol University (2007) advocates "shaping the reward structure" to motivate staff and students alike to support new goals. Fullan stresses the need to "improve teachers' working conditions and morale," including by reducing the teaching workload (Fullan, p.16). To reach a creative balance between teaching and research, greater funding for education, whether from public or private sources, will be also necessary.

Conclusion

In the modern university, research is a major role of faculty members and it is important to understand the factors (institutional and individual) contributing to the research productivity of faculty members. There is also the issue of the kind of research done by scholars and faculty members as they fulfill the discovery of knowledge mission of higher education. There are many genres of research highly dependent on academic field. As discussed above, scholars such as Lindblom (1979) and Argyris (1980) call for an emphasis on usable knowledge and research that makes a difference. Scholars such as Sokal and Bricmont (1998) are skeptical about excessive “fashionable nonsense” that is overly abstract and removed from the real world.

In recent decades, there has been a massive expansion of Thailand’s higher education system exemplified by massification and privatization. However, in general Thailand and its institutions of higher education such as Assumption have lagged behind in the research area. Unfortunately, there have been few studies of the research productivity of Thai faculty members. With relatively low investments in R & D compared to many of its economic competitors in the Asia-Pacific region, Thailand’s future is at risk and it is in danger of being caught in the so-called “middle income trap.” This is why the topic of research productivity is so critically important in the Thai context.

CHAPTER 3: RESEARCH METHODOLOGY AND METHODS

Overall, interviews are an essential source of case study evidence because most case studies are about human affairs. These human affairs should be reported and interpreted through the eyes of specific interviewees, and well-informed respondents can provide important insights into a situation. They also can provide shortcuts to the prior history of the situation... (Yin, 2014)

This chapter describes the general methodology as well as the specific methods employed in this study to determine the factors that influence faculty research productivity in Thai higher education. The chosen methodology is a case study, in this instance an in-depth qualitative study of faculty research at Assumption University. The methods employed are based on different interview genres and extensive documentation analysis to allow for solid data triangulation and interpretation. After providing an overview of the research design and implementation process, this chapter discusses the rationale, strengths and weaknesses of the case study methodology through a review of the relevant literature on the subject. The purpose is to present to the reader a straightforward assessment of the possible limitations of this research design.

Methodology

The case study methodology is well suited to analyzing a key aspect of Thai higher education in a time of needed reform. As Merriam has noted, “a case study design is employed to gain an in-depth understanding of the situation and meaning for those involved” (p. 19), and: “Insights gleaned from case studies can directly influence policy, practice and future research.” Our research focuses on one of Thailand’s most important private institutions of higher education, Assumption University, which has never been the subject of a study in this area. It thus falls under the category of exploratory research (Yin, 1984) and may therefore contribute

to a fresh and deeper understanding of the subject at hand.

As Stake (1995) has written, “Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (p. xi). This definition is applicable to the present study, which attempts to analyze the larger context of faculty research at Assumption University, including how policies and cultural perceptions impact research culture, responsibility and productivity.

Yin has pointed out two important variants of the single case study: *the representative or typical case*, and the *revelatory case* (Yin, 2014, p. 48). The objective of a representative or typical case study is to capture the circumstances and conditions of an everyday or commonplace situation (Yin, 2014). The precondition to employ a revelatory case study arises when an investigator has an opportunity to observe and analyze phenomena previously inaccessible to social science inquiry (Yin, 2009).

The rationale for the single case study method described by Yin (2014) corresponds to the planned methodology for the present study. The publications of faculty members in Thailand represent a “commonplace situation” in university research. Because the problems described in the case study have existed for decades in Thai higher education, an analysis of challenges to research productivity at Assumption University qualifies as “a representative case.” In addition, as there has not been much research on our general topic, and heretofore no study of research at a private university in Thailand, the study fits into the category of a “revelatory case.” And Assumption University presents a specific, single case due to its status as an institution that is private, Catholic, and international.

A key goal of this study is to analyze research at Assumption University in

the larger context of Thai policy and culture. In the analysis of Cohen, Manion and Morrison, “Case studies can establish cause and effect, indeed one of their strengths is that they observe effects in real contexts, recognizing that context is a powerful determinant of both causes and effects” (Cohen, Manion & Morrison, 2000, p. 181). Bryman (2004) points to the benefit of the case study method in providing “a detailed sense of the context that forms the backcloth to the ways that leaders implement the change process” (p.752). Placing our study in such a larger context may serve to make it more relevant and useful to the university research community as well as to institutional leaders and policymakers in Thailand.

Strengths and Weaknesses of the Case Study Methodology

Based on the reasoning above, the case study model is the methodology best suited to study the topic of research productivity at the university level. Quality research ultimately depends on the preparation and motivation of the individual researcher. Thus, focusing on specific examples that capture the concrete experiences of individual faculty and researchers gets to the heart of the current landscape of academic research in Thailand. A widely - recognized advantage of the case study model is that it provides reality-based data on the object of study (Nisbet & Watt, 1984). Because it is grounded in individual experience, it can awaken empathy and interest and is one of the easier methodologies for a general audience to understand (Adelman, Kemmis & Jenkins, 1980).

One potential disadvantage of the case study method is that drawing broad conclusions from individual examples can be challenging. On the other hand, however, a case study clearly and accurately described can provide raw material for reinterpretation by future researchers (Adelman, Kemmis & Jenkins, 1980). This factor is of prime importance given the fact that the present study is one of the first

produced in Thailand on the subject of academic research and, ideally, will be built upon by the work of other authors in the future.

Case studies can often provide insight into intangible but important aspects and interplay that are difficult to quantify. In that regard, they can provide a prism for seeing how various actors and levels interact in the real situation being analyzed. The quality of research in Thailand is influenced by how government, university management, and individual faculty come together. Carefully conducted case study research can illuminate the on-the-ground dynamics that promote or deter effective research.

According to Nisbet and Watt (1984), one final issue to consider in the case study method involves potential pitfalls for the author. Objectivity and the avoidance of observer bias must be rigorously employed throughout the process of case study research. It is difficult to cross-check the results of case study research in order to avoid subjectivity and personal preference. It is up to the individual author to adhere to the highest standards and present the most objective findings possible.

Data Collection Sources

There are six basic sources of data for this study to allow for adequate triangulation of results:

1. Documents
2. Internet documents
3. Interviews with top national experts in various fields
4. Interviews with international, non-Thai academics and administrators
5. Interviews with top administration (president and deans) of Assumption

University

6. Interviews with ten faculty members (extreme case sampling comprised of five most active and five least active in research)

Note: The names of categories five and six are kept anonymous.

Qualitative Research Design

The research for this study is conducted on the basis of a qualitative approach rather than a quantitative or mixed methods framework. The pillars of this naturalistic methodology were a combination of in-depth interviews and detailed documentation analysis. There are two reasons for choosing this approach. First, given the current relatively underdeveloped state of faculty research in Thailand, a purely statistical analysis could be negatively affected by a lack of reliable statistical content. Second, a qualitative strategy based on open-ended questions and specific individual experience makes it easier to analyze Thai research in a larger, integrated context. This broader perspective could include important factors such as faculty motivation, the vagaries of higher education policy, and the impact of globalization, among others.

Interview

The interview component of the study is based upon informal conversational face-to-face interviews with key informants. According to Patton (1980), the informal conversational interview has a number of advantages, including assuring that questions are relevant, allowing the interview to emerge from concrete observation, and taking into account individual and specific circumstances.

The pool of interviewees is composed of four groups. The first three groups are constituted as purposive samples, while the fourth group is an extreme case

sampling. The first of the three purposive sampling groups consists of four Thai policy makers, with potential back-up interviewees in case any one of them is unable to participate. The second group is made up of four non-Thai nationals who are in a position to assess the quality of faculty research in Thailand. The third group involves top administrators at Assumption University, numbering four interviewees. As noted above, these three groups are chosen by the method of purposive sampling, in which researchers handpick the cases to be included in a case study sample on the basis of their typicality. The individuals in these three groups are in a position to provide the most insight and understanding to the problems and questions of this study. The purposive sampling method allows a researcher to create an interview sample that is satisfactory to the specific needs of the study (Cohen, Manion, & Morrison, 2000).

In addition, a range of extreme or deviant cases is sampled in the fourth group. Patton (1980) has noted that sampling extreme/ deviant cases is done in order to obtain information about unusual cases that may be “particular troublesome or enlightening.” Therefore, the final group in this study is composed of an extreme case sampling of eight interviews with Thai faculty. This final group consists of the four most active and four least active research faculty members. To ensure that a correct sampling of most active interviewees is achieved, the study draws upon data from the Center for Excellence in the year 2013. These key informants are the most active full-time Thai faculty members producing research over the past 10 years.

Each interview is recorded and transcribed. During the audiotaping, hand-written notes are taken in parallel. According to Cresswell (2009), “Even if the interview is taped, I recommend that researchers take notes, in the event that recording equipment fails” (p. 183). Interviews are conducted in either Thai or

English depending on the interviewee's preference, since most interviewees can be expected to be relatively fluent in speaking English. Only the interviews with expatriates in group two must be conducted in English. Each interview took approximately an hour to complete; however, this timing depends on the availability and the willingness of the key informants. After the interview has been transcribed, the transcripts are reviewed for accuracy. The data are then put into a coding process. In this way, the study seeks, as recommended by Cresswell, to "use the coding to generate the small numbers of themes or categories...these themes appear as major findings in qualitative studies" (Cresswell, 2009, p. 189). Establishing a qualitative narrative is the next step, including sub-themes, multiple perspectives from individuals and quotations, recognition of themes and patterns. The narrative description is based on the interpretation of data.

Strengths of the Interview Method

The interview method is flexible by nature. An interviewer can simplify data gathering by adapting the interview process according to circumstances as the individual interview unfolds. Martyn Denscombe (2004) has noted that interviewing allows for developing a clear line of inquiry (p.189).

As for qualitative data, they are divided into documents and interviews. In general, qualitative data are comprehensive and rich, allowing a specific and broad examination and selection of data. Moreover, according to Denscombe (2004), proper documentation is crucial in allowing researchers to use their own interpretive skills (p. 280).

Weaknesses of the Interview Method

Patton (1980) also points to specific weaknesses, however, that affect the informal conversation interview method. Data can sometimes be difficult to

organize and analyze, given the fact that different questions are tailored to different interviewees. This also runs the potential risk of making results less systematic and comprehensive.

As for the weaknesses of the in-depth interview, some interviewers may have limited control over number factors. According to Gubrium and Holstein (2002), the most significant ethical imperative is to tell the truth. However, as Denzin and Lincoln, as cited in Gubrium and Holstein (2002), have pointed out, during this current era, research can be affected by what may be called “the postmodern moment.” According to Denzin and Lincoln, this “postmodern” problem can be divided into two crises: the crisis of representation, on the one hand, and the crisis of legitimation (for qualitative research) on the other. These contemporary “crises” can lead some to turn to advocacy of “standpoint epistemologies” (quoted in Gubrium and Holstein, 2002), where the research interviewer not only *self-consciously empathizes* with the informants as individuals, but *self-consciously sympathizes* with the political or community goals of those informants as *a category or collective* (Gubrium and Holstein, 2002).

This modern tendency may create dangers for the researcher with regard to the background capability in interpreting data. Also, there could be problems involving a lack of validity and a danger of oversimplifying the results (Denscombe, 2004, p. 281). Apart from this, there is a concern that some important perspectives might be lost in the process of interpreting the interviews or document analysis.

Document Review

According to Wolcott (1992), to be systematic in qualitative research is not only to engage in “watching” and “asking,” but also in “reviewing” (p. 19). Therefore,

this study does not rely solely on the interview method, but also incorporates document analysis as an important supplemental methodology.

In this study, randomly selected résumés of faculty members of Assumption University constitutes the primary documents to be analyzed. Only full-time faculty members are included in the research pool. The method applied is stratified random sampling by field. A total of 15 strata are analyzed, drawn from the 10 undergraduate schools and five graduate schools of AU. From each of the fifteen strata, a random sample of five full-time faculty résumés is selected from each school, for a grand total of 75 résumés. All updated résumés of AU faculty members are kept at the Center for Excellence (CFE) in the form of Self-Assessment Reports (SAR).

The sampling of individual faculty résumés as outlined above allows for an analysis of individual factors in faculty research. To assess the impact of institutional factors, this study draws upon two sources for document analysis. The first consists of documents from the Center for Excellence (CFE) at Assumption University. And the second is internet documentation. The Center for Excellence maintains in-depth and reliable documentation regarding university faculty. From the CFE, two comprehensive sets of documents are selected. First is the Self-Assessment Report (SAR). The SAR is helpful because it keeps the updated CVs and portfolios of all faculty members in each school at the university. All schools are required to submit an SAR every year. As previously discussed in this chapter, individual résumés are drawn from the SARs to allow a stratified random sampling.

Each SAR contains other important documents and statistical data that are essential components of our document analysis. To be specific, each SAR is required to include the following data:

1. Research

- 1.1 Research policy and plan
 - 1.2 Research sources and funding
 - 1.3 Research results
 - 1.4 Percentage of those who published research and creative works, or obtained intellectual property registration or property patent, or are utilized at the national and international levels in proportion to the number of full-time lecturers
 - 1.5 Percentage of research and innovations published, disseminated and/or used at the national and international levels in proportion to the total number of full-time lecturers
 - 1.6 Amount of research and innovations registered as intellectual property or patented in proportion to the total number of full-time lecturers within the past five years
 - 1.7 Percentage of research articles cited in the refereed journals or the national or international databases (e.g. ISI, ERIC) in proportion to the total number of full-time lecturers
- (Assumption University, 2012)

The second source for document analysis is drawn from the report of the Internal Annual Audit Team (IAAT). The Center for Excellence (CFE) keeps the IAAT reports of all schools at Assumption University. Therefore, this study conducts document analysis in the following areas of the report:

- 2. Data from the Internal Annual Audit Team
 - 2.1 True Performance Outcome
 - 2.2 Opportunities for Improvement
 - 2.3 Overall Performance Assessment Observations and Comments

2.4 Overall Opportunities for Improvement

(Assumption University, 2012)

Other factors to be assessed include: What percentage of AU faculty have doctorates, ABD, MA, BA? How many have degrees from abroad? What percentage of faculty are international?

Strengths of Document Review

The primary advantage of document analysis results from choosing documentation according to its thoroughness. A case study requires comprehensive data. Furthermore, data “can be viewed repeatedly” (Yin, 2014, p. 86), which can be of use to the reader. According to Yin (2014), documentation is pertinent to research insofar as it contains exact names, references and details of an event (p. 86). And as Denscombe (2004) has stated, proper documentation is crucial in allowing researchers to use their own interpretive skills (p. 280). An interview alone may not fit all situations well. For example, studies can fail to miss the nuances of intimate personal relationships, which cannot easily be observed, and interviewees often are reluctant to discuss personal dynamics (Riley, 1963). The interview method may be disadvantaged at this point. In such a situation, the documentary material can become useful and bring an element of stability to the study. As Merriam (1998) has noted, “documentary data are ‘objective’ sources of data compared to other forms” (p. 126).

Weaknesses of Document Review

At the same time, it is clear that the documentation method may have shortcomings. According to Yin’s analysis, one important problem is potential lack of access to documents. Some could be withheld by a source (Yin, 2014). And even

more problematically, due to a lack of ethics or out of respect for his or her profession, some faculty members or institutions could possibly engage in falsification of data at some point.

Reasons for not Using Survey Design Methodology

The reason for not selecting survey design lies in its potential weakness in lacking cultural validity. Morgan points out that “the emerging notion of cultural validity” (1999, p.111) is particularly an issue in cross-cultural, intercultural and comparative kinds of research, where the intention is to shape research so that it is appropriate to the culture of what is being researched. Cultural validity, Morgan suggests, is relevant at all stages of research and affects its planning, implementation and dissemination. It involves a degree of sensitivity to the participants, cultures and circumstances of the subject being studied (Morgan, 1999, p. 111).

Data Analysis

Construct Validity

The decision to use both the interview method and documentation methodology in this study is intended to make it possible to leverage multiple sources of evidence. According to Lincoln and Guba (1985), naturalistic inquiry can be addressed by a triangulation of methods, sources, investigators and theories.

Triangulation may be defined as the use of two or more methods of data collection in the study of some aspect of human behavior. This study relies on methodological triangulation, or using the same method on different occasions or different methods on the same object of study (Cohen, Manion, & Morrison, 2000).

Interviews and documentation analysis are thus applied to ensure validity and

reliability.

To assure the validity and reliability of interviews in this study, in particular with high-level Thai policy makers, much time is devoted to preparing and researching each interview before it is conducted. According to Walford (1994), “Powerful interviewees are usually very busy people and will expect the interviewer to have read the material that is in the public domain” (p. 225).

Reliability

According to Yin (2014), there are two tactics for assuring reliability in the case study method. The first is the *case study protocol*, and the second is the *case study database*. As outlined in this chapter, a research protocol has been created, and every attempt is made to implement it rigorously.

Throughout this study, the quality of the data analysis is influenced by the accuracy and the validity of the source. It is important to realize that precision and rigor in collecting and computing data can have an impact on the validity of the study.

Cultural Context

One final potential pitfall arises from the possibility that research findings derived from a study in the context of one specific culture will have limited relevance when applied to other cultural contexts. The present study attempts to situate university research within the larger perspective of the institutional, political and cultural context of Thailand. There are a number of studies that have been produced in recent years that analyze relevant aspects of Thai society. Suntaree (1990), for example, concludes that Thai people are individualistic rather than

collectivistic. Based on her research, “the Thai social system is first and foremost a hierarchically structured society where individualism and interpersonal relationship are of utmost importance (p.160).

Indeed, according to Suntaree there are a number of Thai traditions and characteristics that must be kept in mind when analyzing university research in Thailand. One is the concept of *krengjai*, ”which means “to be considerate, to feel reluctant to impose upon another person, to take another person’s feelings (and „ego”) into account, or to take every measure not to cause discomfort or inconvenience for another person” (p.164). *Krengjai* is valued as a way to save face for another person. On the surface, Suntaree’s research would seem to contrast with Hofstede’s view of Thailand as ranking low in the individualism index (2005). It may be that this discrepancy results from slightly different interpretations of what constitutes an individual action. Suntaree (1990) appears to emphasize the active role and responsibility of each individual in creating and maintaining social networks in the Thai context.

In conclusion, the research methodology and methods of this study have been carefully described above, including the data collection procedures and the research design. The instruments of each method and the methods chosen for collecting and analyzing data have been outlined, along with the rationales, strengths and weaknesses of each method. On this basis, the next chapter presents the findings of research on the single case of faculty research productivity at Assumption University.

CHAPTER 4: RESULTS

Part 1: Descriptive Findings

Part 1 provides a statistical overview of factors that influence research productivity at Assumption University (AU) in Thailand. The first section of part 1 reviews recent findings from research conducted by Assumption University assessing its own performance in the following areas: gender balance, academic degrees, academic titles, and numbers of publications. Section 2 looks at the most recent studies of AU by the Office of Higher Education Commission (OHEC) and the Office for National Education Standards and Quality Assurance (ONESQA). Both institutions are mandated to assess and accredit institutions of higher education in Thailand, including their faculty research. Finally, section 3 evaluates the résumés of randomly selected members of the AU faculty. These individual cases give a sense of realities beneath the surface of statistical findings.

Section 1: Research Profile of Assumption University and Its Faculty (Relates to Research Question One).

The faculty at Assumption University is made of slightly over 1,000 members distributed across 15 schools. Five of these 15 schools offer only graduate programs:

Graduate School of Business

Graduate School of Philosophy and Religion

Graduate School of Education

Graduate school of English

Graduate School of E learning

Among the ten remaining schools, five offer only Bachelor's degrees. These schools are:

School of Nursing Science

School of Engineering

Albert Lawrence School of Communication Arts

Montfort Del Rosario School of Architecture and Design

School of Music

The other five schools have both undergraduate and graduate programs as follows:

Martin de Tours School of Management and Economics offers three degrees (B, M, D)

School of Science and Technology offers three degrees (B.Sc., M.Sc., Ph. D.)

School of Biotechnology offers three degrees (B, M, D)

School of Law offers Bachelor and Master's programs (B, M)

School of Arts offers Bachelor and Master degree programs (B, M)

As of 2013, the total full-time faculty at AU numbers 1075. Overall, there is an approximate balance between genders, with 51.1 per cent male and 48.9 per cent female.

The largest gap between male and female faculty members is found in the School of Nursing Science, where only 3.7 per cent are male (only one male lecturer) and 96.3 per cent are female. In contrast, the School of Engineering has the largest preponderance of male faculty at 92.1 per cent male and 7.9 per cent female. Close behind is the School of Philosophy with 90.9 per cent male and 9.1 per cent female.

Looking at the AU faculty in the aggregate, the gender balance differs slightly between undergraduate and graduate levels. At the undergraduate level,

female faculty members are in the majority at 52.6 percent, whereas the situation is reversed at the graduate level where males hold 67.5 percent of faculty positions.

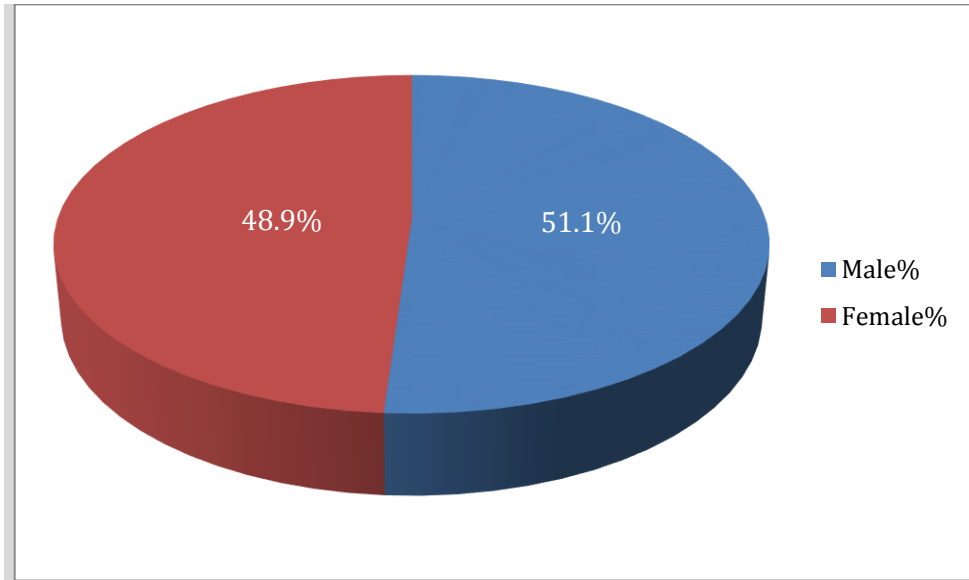


Figure 2. Comparison by Gender (All Schools)

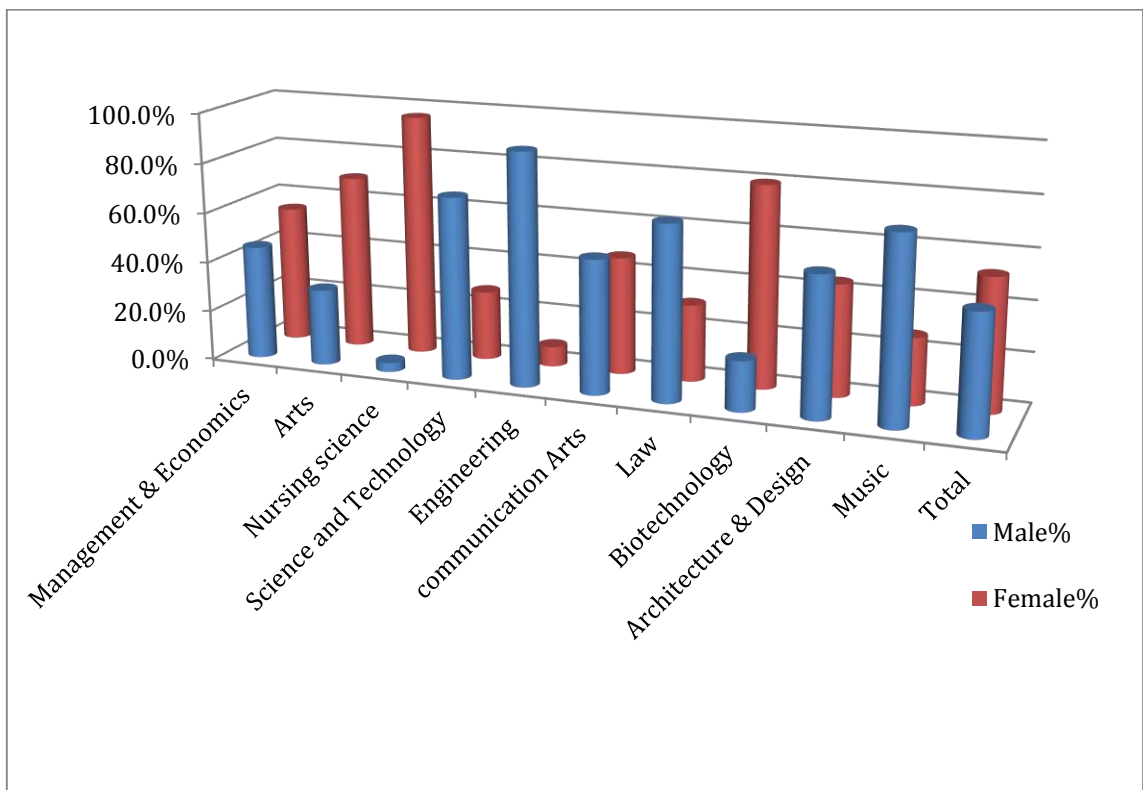


Figure 3. Comparison by Gender (Undergraduate Programs)

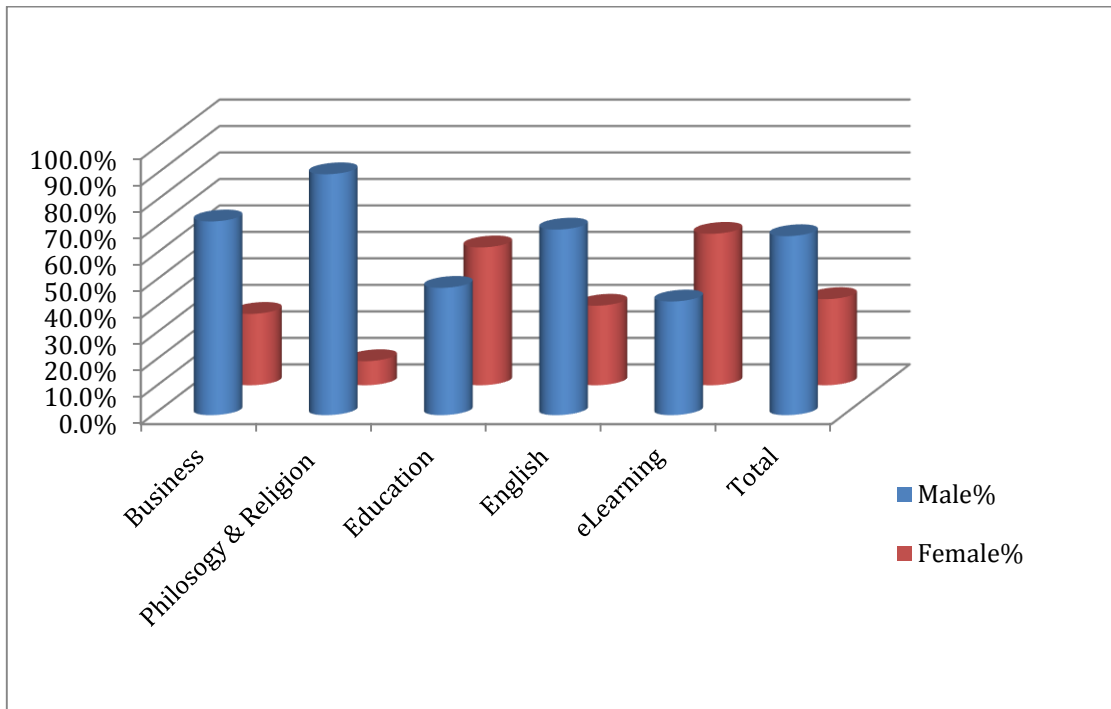


Figure 4. Comparison by Gender (Graduate Programs)

Academic Credentials: Degrees and Positions

Overall, the breakdown of highest degrees attained by full-time faculty at AU is: 7.9 percent Bachelor's degree; 53.9 per cent Master's degree; and 38.2 per cent doctoral degree.

At the undergraduate level, there is a wide variation among the ten schools in the level of degrees obtained. For example, in Science and Technology, all faculty members have gone beyond the Bachelor's degree, and fully 65 percent hold doctorates. The other two schools with the highest percentage of doctorates are Engineering at 52.6 percent and Biotechnology at 44.8 percent. In contrast, three schools are characterized by an unusually high percentage of Master's level faculty, and a low percentage of doctorates: School of Music 86.7 – 4.4 percent; School of Architecture and Design 86.6 – 4.4 percent; and School of Communication Arts 80.7 – 1.6 percent.

Turning to the distribution of faculty positions, it is striking that the vast majority of faculty members at Assumption University remain at the level of lecturer. In seven out of ten undergraduate schools, over 90 percent are lecturers, with the percentage reaching 100 percent in the School of Music and the School of Communication Arts. Even in schools with the highest percentage of doctorates, the number of faculty moving beyond lecturer is surprisingly small. The exception to this pattern is Science and Technology where 40 percent move on to more senior positions, mostly as Assistant Professors. Indeed, the few faculty members at AU who rise above lecturer tend to remain at the Assistant Professor level, with a small number proceeding on to the Associate Professor level. And the number of undergraduate faculty at AU who reach Full Professor is miniscule. Only two schools, Science and Technology (3.3 percent) and Law (3.2 percent) have any full professors at all.

As might be expected, the situation is quite different in the five Graduate Schools, where the percentage of faculty with doctorates ranges from 93.2 to 100 percent. Even at the Graduate level, however, the great majority of faculty members remain lecturers, from 72.7 percent in the School of Philosophy and Religion to 94 percent in the School of Business. Mirroring the situation in the undergraduate schools, most of those who rise beyond lecturer remain Assistant Professors. Two of the five Graduate Schools have no faculty at the Associate Professor level, and only one of the Graduate Schools has any Full Professors, the School of Education at 3.3 percent (AU, 2013). The majority of AU full-time faculty members are lecturers with no academic title.

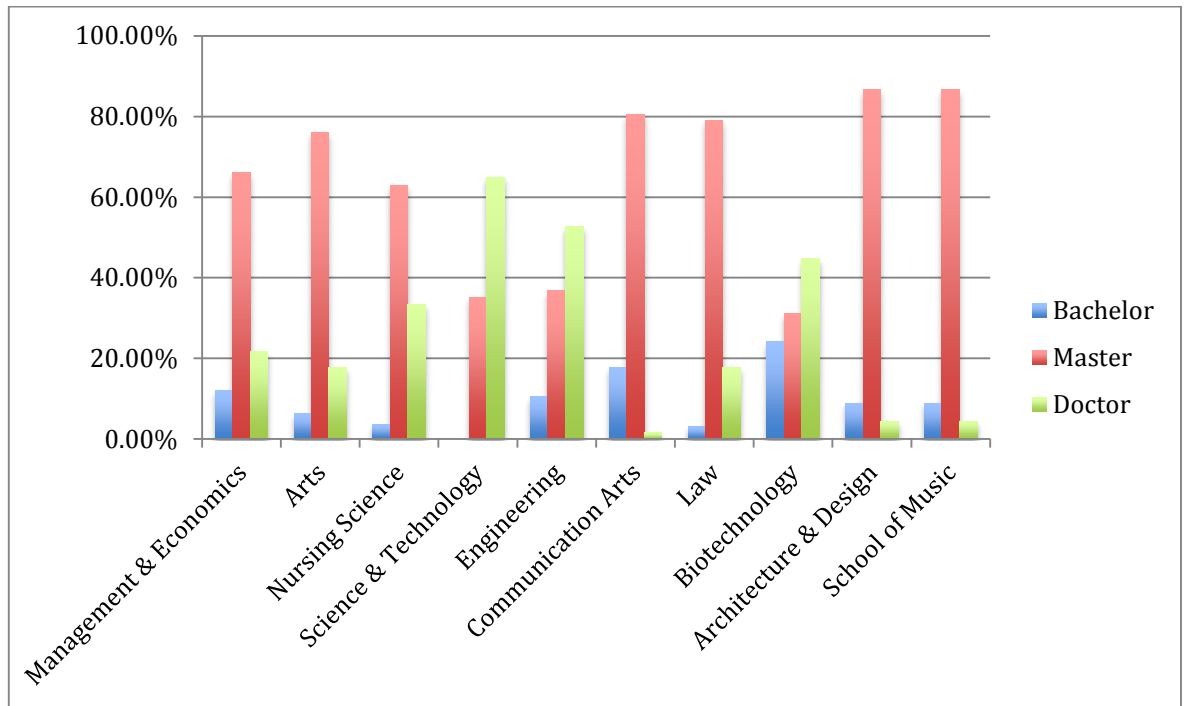


Figure 5. Percentage Comparison by Academic Credentials (Undergraduate Programs)

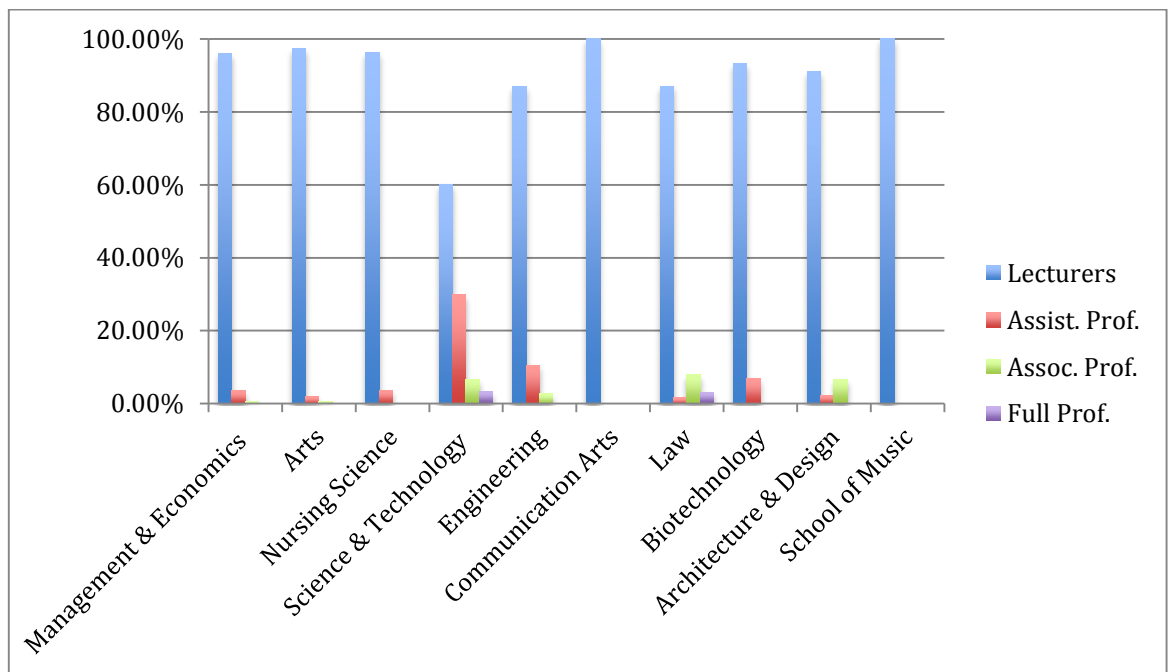


Figure 6. Percentage Comparison by Academic Titles (Undergraduate Programs)

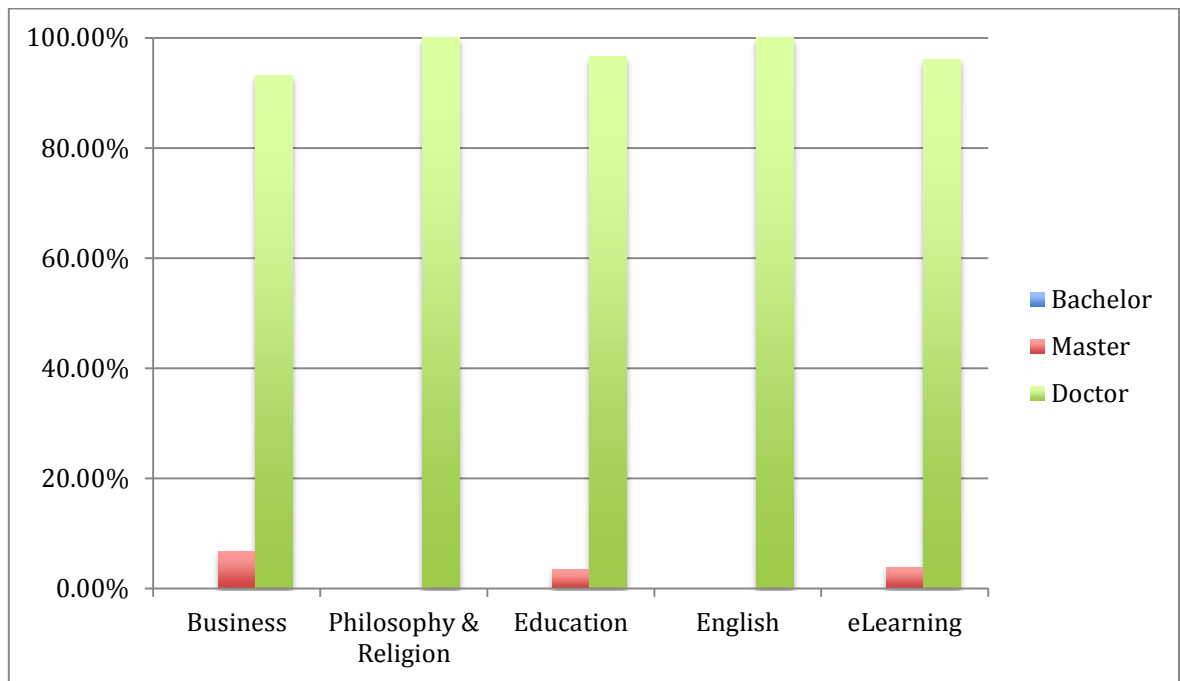


Figure 7. Percentage Comparison by Academic Credentials (Graduate Programs)

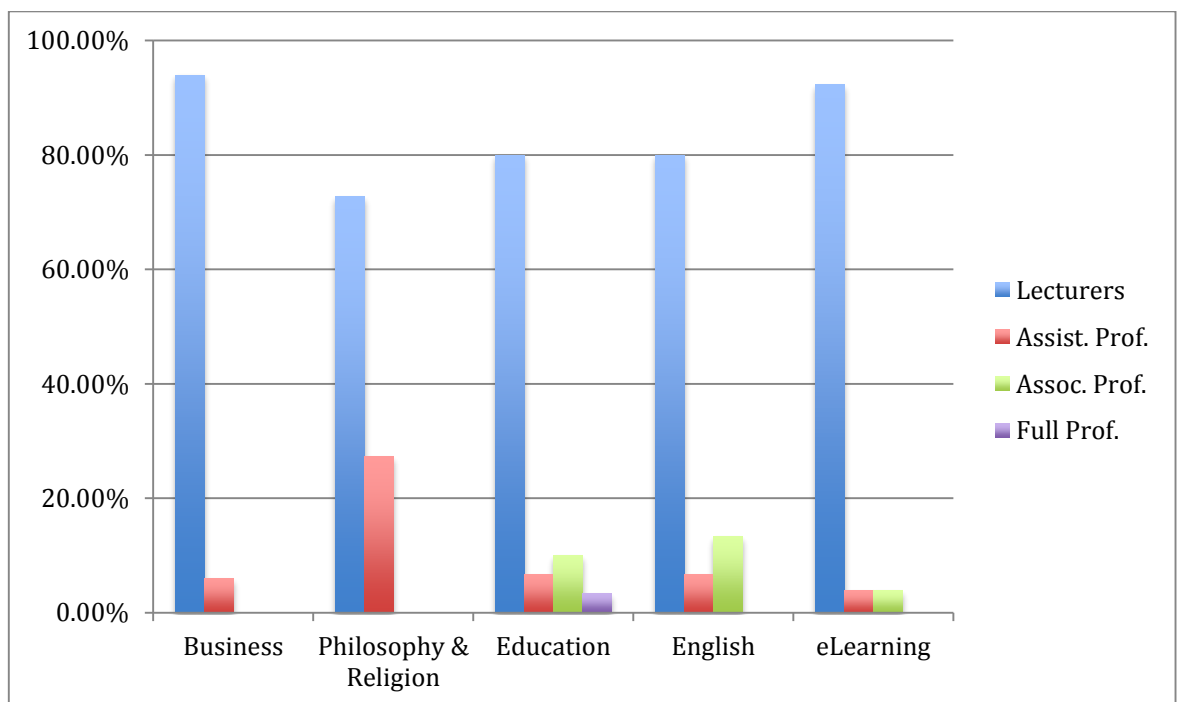


Figure 8. Percentage Comparison by Academic Titles (Graduate Programs)

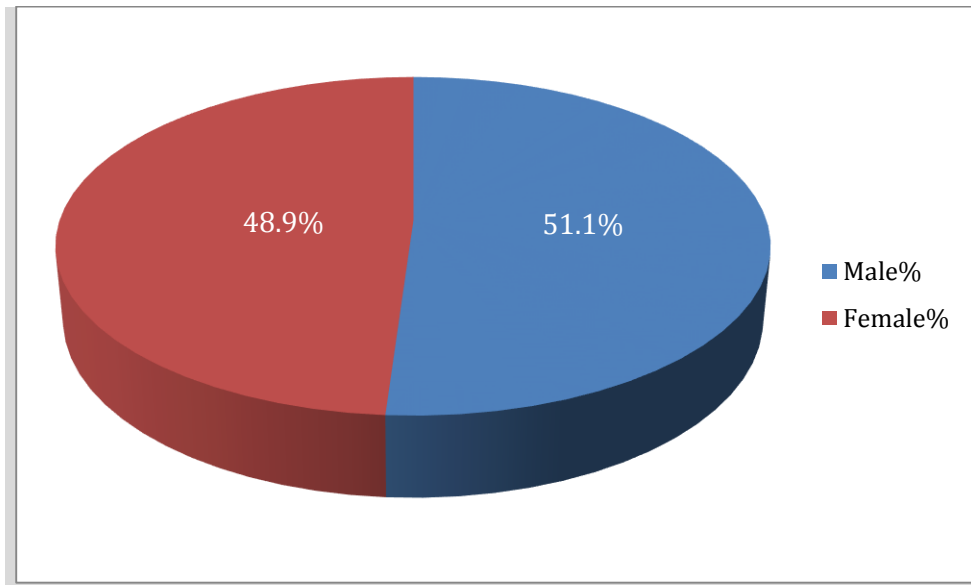


Figure 9. Comparison by Gender (All Schools)

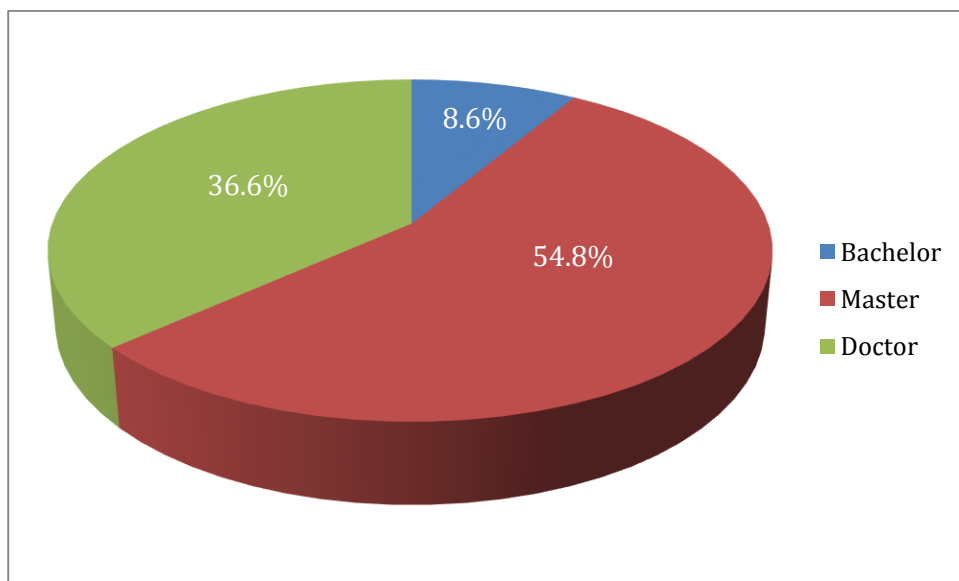


Figure 10. Comparison by Academic Credentials (All Schools)

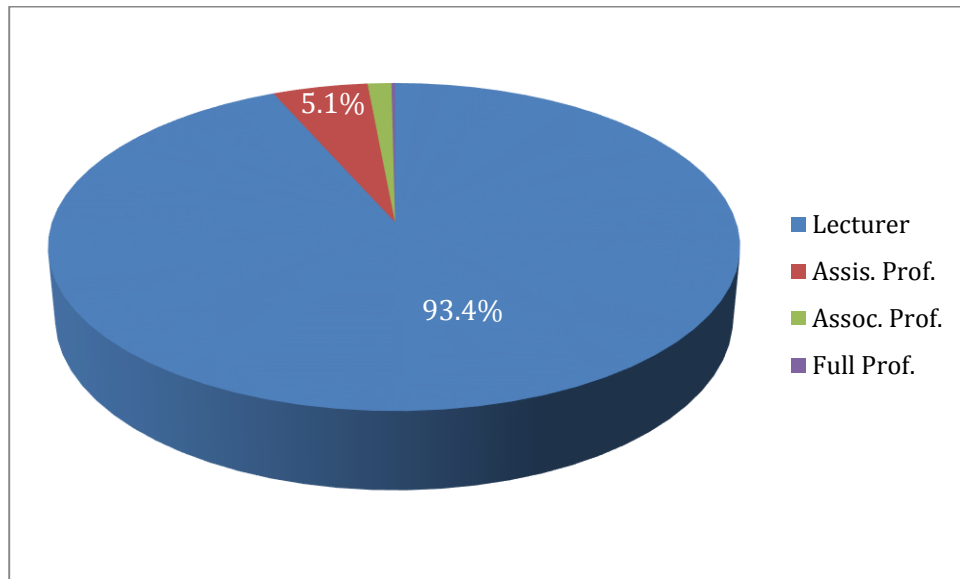


Figure 11. Comparison by Academic Titles (All Schools)

According to the Rayong Institute of Science and Technology, Thailand does not have a full tenure track system, in contrast to many other international countries (RIST, 2014).

The following section presents a statistical analysis of research productivity in the 15 schools at Assumption University. Since 2002, ONESQA has required from all universities in Thailand data on research productivity. On this basis, AU has released an internally-produced analysis of research publications by all 15 of its schools. The table below shows the results of these annual studies from 2003 through 2012.

Table 1

Research published and disseminated in Academic Years 2003-2012 (10 Years)

School	Published and disseminated in 10 Years										Total
	03	04	05	06	07	08	09	10	11	12	
1. Martin de Tours School of Management and Economics	1	4	5	17	34	16	26	28	36	32	199
2. School of Arts	-	1	2	1	1	2	3	10	8	4	32
3. School of Nursing Science	0	2	15	5	2	0	5	1	11	10	51

4. School of Science and Technology	10	14	4	18	20	21	26	28	35	13	189
5. School of Engineering	-	-	1	17	13	15	9	9	22	11	97
6. Albert Laurence School of Communication Arts	-	-	-	1	7	-	2	-	1	-	11
7. School of Law	-	-	4	-	-	-	-	-	1	1	6
8. School of Biotechnology	-	-	13	5	3	3	1	4	5	11	45
9. Montfort del Rosario School of Architecture and Design	-	-	-	-	-	-	2	1	1	4	8
10. School of Music	-	-	-	-	-	-	-	-	-	-	-
11. Graduate School of Business	-	11	-	-	13	11	14	20	15	13	97
12. Graduate School of Philosophy and Religion	1	-	-	-	-	-	1	3	5	1	11
13. Graduate School of Education	-	1	-	-	1	-	3	-	6	7	18
14. Graduate School of English	-	-	-	-	-	2	5	5	6	7	25
15. Graduate School of eLearning	-	-	-	-	17	7	6	6	14	13	63
Assumption University Total	12	33	44	64	111	77	103	115	166	127	852

Source: Assumption University (2013)

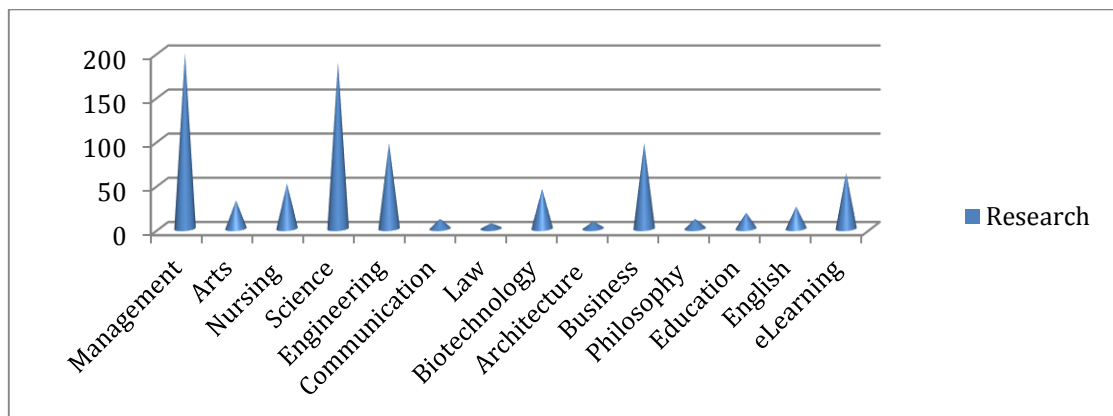


Figure 12. Total Amount of Research Published and Disseminated in Academic Years 2003-2012 (10 Years)

During the past ten years, the quantity of research has varied significantly among the schools at Assumption University. The two most productive have been the Martin de Tours School of Management and Economics, with 199 total

publications, and the School of Science and Technology with 189. In the second most productive category come the School of Engineering and the Graduate School of Business, with 97 publications each. At the other end of the scale, the School of Law has produced only 6 publications over the past 10 years and the Montfort del Rosario School of Architecture and Design 8. According to the AU study, the School of Music has remained without a registered research publication since 2003 (AU, 2013).

As the chart below indicates, the overall faculty research productivity at Assumption University has increased over the past decade, rising from only 12 publications in 2003 to 127 in 2012. The biggest jump in publications came between 2003 and 2007. Since 2007 there has been some further improvement, but with ups and downs. For example, a significant dropping off is noticeable from 2007 to 2008 and again from 2011 to 2012. The data show that an increase in publications coincided with the external assessment of 2007 but not with that of 2012.

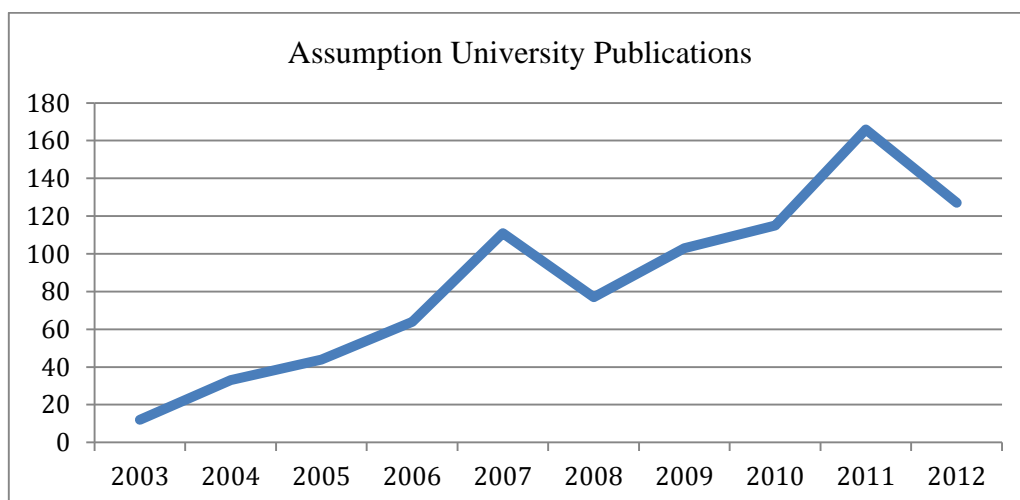


Figure 13. Assumption University Research Publications by Year 2003-2012

Research Fund

Table 2

Funding for Research or Creative Works Relative to the Total Number of Faculty Members and Researchers for Academic Year 2012

Schools		Amount of research funds (Baht)			Total number of full-time lecturers and researchers			Research funds: person	Points Maximum Score is 5
					Working	On Leave	Total		
		Internal	External	Total					
1. Science and technology (Score of 5 = 60,000: person)									
1	Biotechnology	120,531.7	827,500	948,031.7	21	5	26	45,144.4	3.80
2	Science and Technology	-	2,824,000	2,824,000	44	3	47	64,181.8	5.00
3	Engineering	50,000	2,299,737	2,349,737	35	1	36	67,135.3	5.00
	Total	170,531.7	5,951,237	6,121,768.7	100	9	109	61,217.7	5.00
2. Health science (Score of 5 = 50,000: person)									
4	Nursing Science	53,874.5	262,000	315,874.5	21	3	24	15,041.6	1.50
	Total	53,874.5	262,000	315,874.5	21	3	24	15,041.6	1.50
3. Humanities and social sciences (Score of 5 = 25,000: person)									
5	Law	140,000	960,000	1,100,000	53	6	59	20,754.7	4.15
6	Communication Arts	32,398.5	32,398.5	64,797	56	10	66	1,157.1	0.23
7	Management	-	160,000	160,000	391	21	412	409.2	0.08
8	Arts	134,300	-	134,300	148	9	157	907.4	0.18
9	Architecture	114,370	440,000	554,370	43	2	45	12,892.3	2.58
10	Music	-	-	-	15	0	15	0.00	0.00
11	Grad. School of Business	100,000	4,043,900	4,143,900	130	0	130	31,876.2	5.00
12	Grad. School of E-Learning	-	-	-	20	0	20	0.00	0.00
13	Grad. School of Education	-	-	-	25	0	25	0.00	0.00
14	Grad. School of Philosophy	25,000	379,787	404,787	10	0	10	40,478.7	5.00
15	Grad. School of English	100,000	100,000	200,000	10	0	10	20,000	4.00
	Total	646,068.5	6,116,085.5	6,762,154	901	48	949	7,505.2	1.51
	Grand Total	870,474.7	12,329,322.5	13,199,797.2	1,022	60	1,082	12,915.7	
Assumption University: Average Score									2.43

Source: Assumption University Self-Assessment Report (SAR) Academic Year 2012
(AU, 2013)

NOTE: The table above is based on the following OHEC scoring criteria:

1. Science and Technology: The research/creative works funds are derived from internal and external sources amounting to 60,000 Baht or more per lecturer / researcher = 5 points

2. Health Science: The research/creative works funds are derived from internal and external sources amounting to 50,000 Baht or more per lecturer / researcher = 5 points

3. Humanities and Social Sciences: The research/creative works funds are derived from internal and external sources amounting to 25,000 Baht or more per lecturer / researcher = 5 points

One way of putting the current amount of external research funding at Assumption University into perspective is to compare the total with that of other Thai Universities. For the academic year 2012, total external research funding at AU amounted to 12.3 million baht. In contrast, the total at Chulalongkorn University in 2011 was 1409.3 million baht (CHEQA, 2012). At Kasetsart University in 2011, the total was 1496.6 million baht (CHEQA, 2012). Both Chulalongkorn and Kasetsart benefit from being government universities, while AU is a private institution.

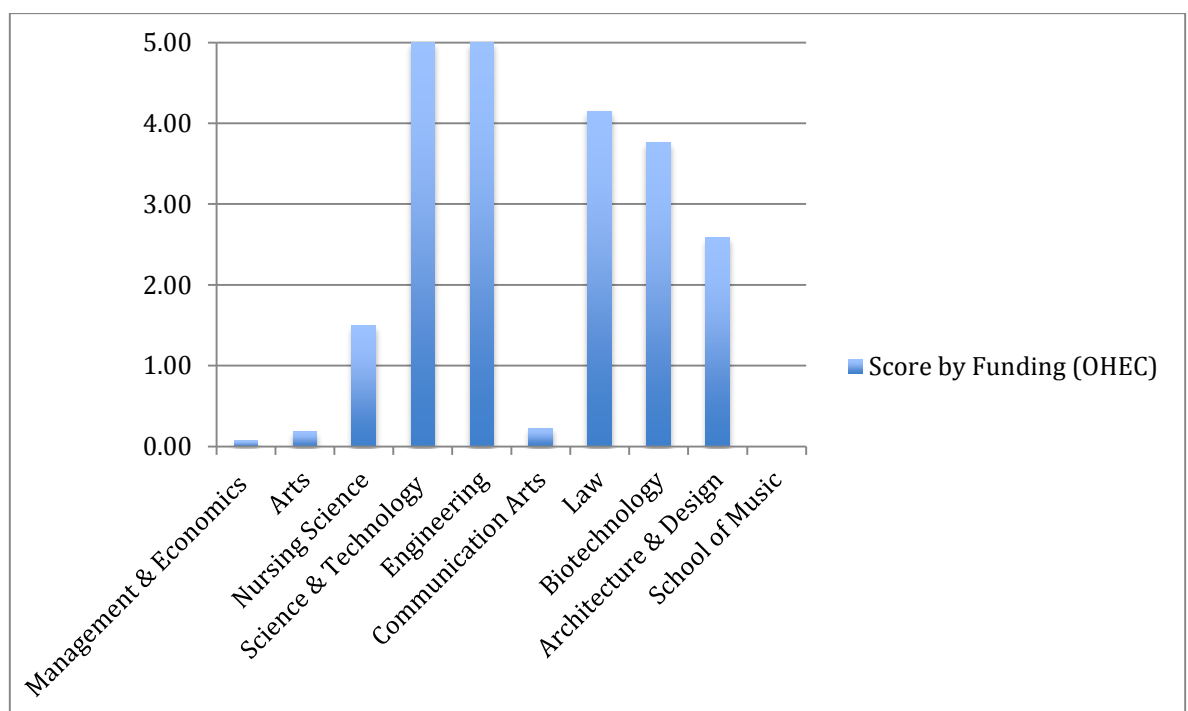


Figure 14. AU Self Assessment: Funding Scores by Undergraduate Schools

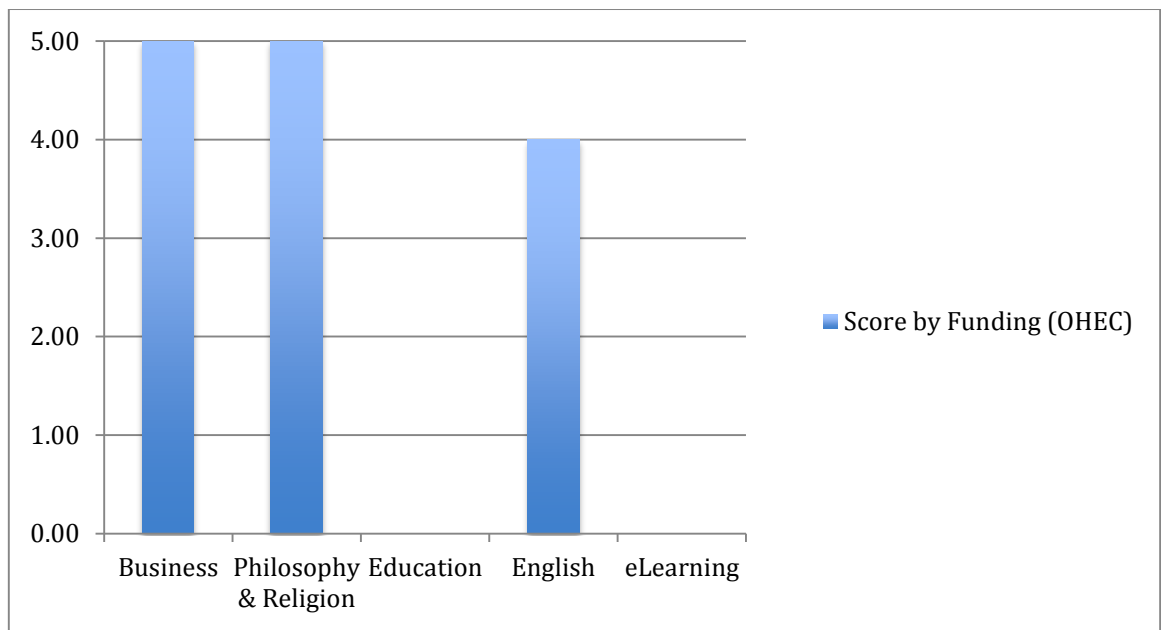


Figure 15. AU Self Assessment: Funding Scores by Graduate Schools

There appears to be a positive correlation between research funding and research scores: the higher the funding, the higher the research scores.

According to AU's own research rating system, which is based on established ONESQA standards, 154 research papers were published by AU faculty in 2012. Of these, eight were rated in the highest level. AU describes the four rating categories as in the table below:

Table 3

Quality Levels of Published Research Papers for Academic Year 2011- 2012

Weight	Quality Levels of research
0.25	The paper is published in proceedings of national/ international academic conference or published in a national academic journal listed in TCI database.
0.50	The paper is published in a journal on the ONESQA list of national academic journals.
0.75	The paper is published in an international academic journal listed in SJR database (SCImago Journal Rank: www.sciujdesof8nv.magojr.com). The journal is ranked in Quartile 3 or Quartile 4 in the previous year in the subject category which is published or published in international journal listed on the ONESQA announcement.
1.00	The paper is published in an international academic journal listed in SJR database (SCImago Journal Rank: www.scimagojr.com). The journal is ranked in Quartile 1 or Quartile 2 in the previous year in the subject category which is published or published in international journal listed in ISI database.

Source: Office of National Education Standards and Quality Assurance (2011)

It is worth noting that one of the eight highly ranked papers, produced in the Graduate School of Philosophy and Religion, appeared in a journal published by Assumption University.

Section 2: Analysis of a Random Sample of Faculty Résumés

This part of the study is based on a random sample of 75 faculty résumés at Assumption University. The random sample consisted of five faculty members from each of the 15 schools at AU, for a total sample group of 75 faculty members. In analyzing this randomly-selected group of 75 résumés, consideration was given to such factors as highest academic degree attained; the relative mix of academic degrees between overseas and Thai institutions; and academic productivity, to

include books, research papers, and conferences attended.

Among the 75 cases analyzed, the breakdown of highest academic degree attained was as follows: 44 doctorates, 30 Master's degrees, and 1 Bachelor's degree. The highest percentage of PhDs tended to be in those graduate schools of group 3 (Humanities and Social Sciences) related to the liberal arts, such as the Graduate School of Philosophy and Religion, the Graduate School of English, the Graduate School of Education, each of which had five PhDs among the five randomly selected faculty members. At the other end of the spectrum, only one faculty member held a PhD in the following schools: the Martin de Tours School of Management; the School of Arts; the School of Law; the Albert Lawrence School of Communication Arts; and the School of Music. Notably, the Montfort Del Rosario School of Architecture and Design had no PhDs in the sample group, but rather 5 Master's level Degrees, all attained at US institutions.

In general, the relative mix of PhDs held by the sample groups tended toward degrees attained overseas. Of the 75 faculty members, 44 had attained a PhD. Of these 44 PhDs, 26 were awarded by universities overseas and 18 by universities in Thailand. Overall, a large majority of the sample group had studied and received some academic degree overseas. Indeed, out of 75 faculty members, 55 had studied overseas, and only 20 had studied only in Thailand. Of the 55 with overseas study experience, 40 had studied in the UK, US or Australia; four had studied in Europe; five had studied in East Asia; and six had studied in other countries in Asia. The chart below shows these five categories of degree provenance in percentage.

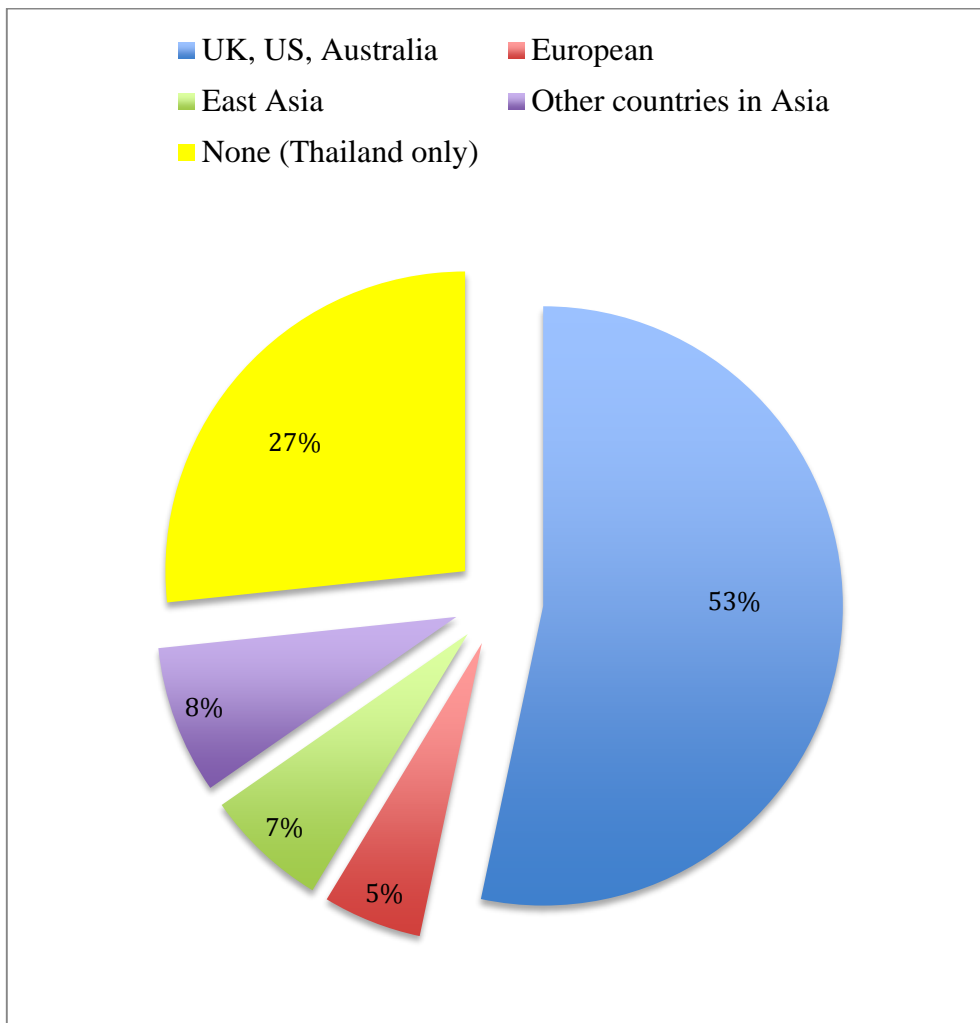


Figure 16. Lecturers with Study Abroad Experience Based on 74 Randomly Selected AU Faculty Members: Site of Their Studies

Note: one out of 75 has only a bachelor's degree.

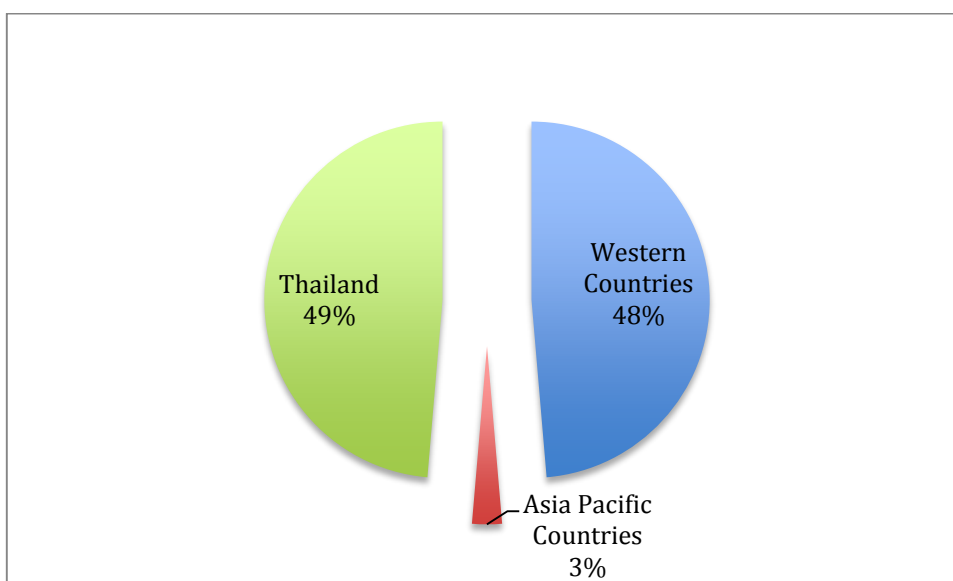


Figure 17. Master's Degree Country of Origin for 74 Randomly Selected AU Faculty Members

Note: one out of 75 has only a bachelor's degree.

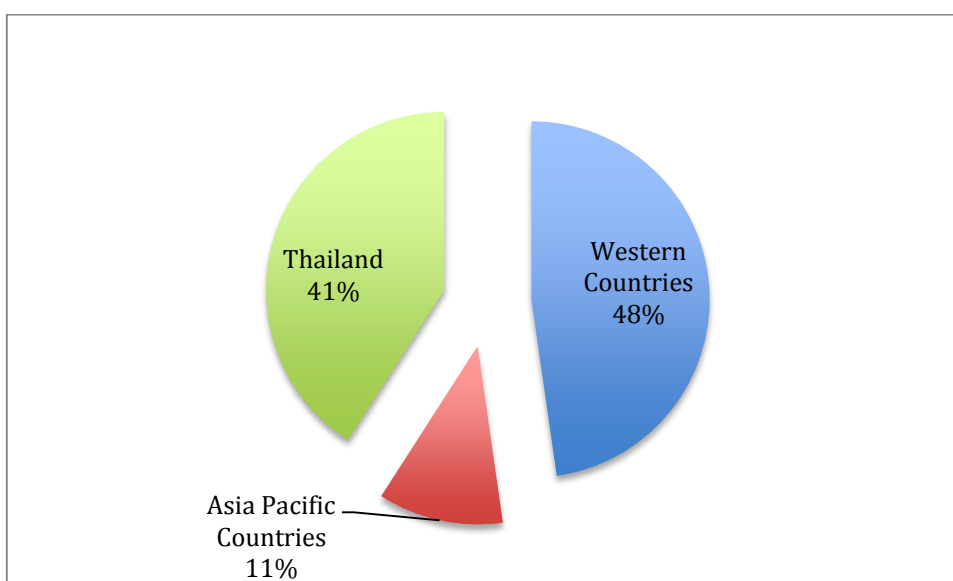


Figure 18. Doctoral Degree Country of Origin for 44 Randomly Selected AU Faculty Members

Note: one out of 75 has only a bachelor's degree.

Almost all of the 15 Schools have at least three of five sampled faculty members with degrees from overseas institutions. The exceptions are the School of Nursing, which has one and, perhaps most surprisingly, the School of Science and Technology where only one faculty member has an overseas degree and all five have their highest degree from Thai universities.

Academic productivity, including books, research papers, and conferences attended varies significantly among the 15 schools as well as within each school. One common factor was the relatively small number of books published by faculty in each of the schools. Of the 75 faculty members, only four had a published book to their credit. One researcher had published five books, which brought the grand total of books published to 8.

Among the most productive schools with the highest number of publications, the School of Philosophy and Religion stands out as do the School of Nursing, the School of Science and Technology and the School of Engineering, each with at least 20 papers published and a significant number of conferences attended. Academic productivity declined unevenly among the other schools, reaching no papers or conferences at three schools, namely the Albert Lawrence School of Communication Arts, the School of Music and the Montfort Del Rosario School of Architecture and Design. Even in the most productive schools, just one faculty member accounted for the majority of the academic output. This was particularly true at the Graduate School of Philosophy and Religion and the School of Science and Technology. In contrast, the School of Nursing benefited from academic output from all five faculty members in the random sample.

Academic output across the 15 schools appeared unaffected by whether faculty members had attained their highest degrees at overseas universities or at Thai

universities. Among the four schools with highest number of research publications, the School of Engineering and Graduate School of Philosophy and Religion each had three out of five highest faculty degrees from overseas universities, while the School of Nursing and the School of Science and Technology had just one each. Indeed, the School of Science and Technology ranked near the top in academic output with all five of its randomly sampled faculty holding their highest academic degrees from Thai universities.

It is important to consider not just the quantity but, to the extent possible, the quality of papers published by the 75 faculty members selected in the random sample. One criterion for assessing publication quality is found at Table 3, which shows the Quality Levels of Published Research Papers for Academic Year 2011-2012 of ONESQA. Based on this ONESQA report, it appears that the majority of publications reviewed in this study scored in the lower range of quality assessment. Although several schools, such as the School of Nursing, produced relatively large numbers of publications, these publications tended to score in the 0.25 range according to ONESQA criteria. The majority of publications in other schools do not rise above this level. Only two schools, the School of Biotechnology and the Graduate School of Philosophy, had a faculty member whose publication achieved a higher score of 1.00.

Section 3: Assumption's International and National Rankings

Each year a number of institutions publish rankings of universities around the world. These rankings cover a wide range of factors, from teaching to research, and are an important indicator for any university seeking to attain world class status. The most influential annual rankings are 1) the Times Higher Education (THE) World

University Ranking, and 2) the Academic Ranking of World Universities (ARWU), which is also known as the Shanghai Ranking. The former ranking assessment is produced by Times Higher Education (THE) in conjunction with Thomson Reuters, while the latter is prepared by the Center for World Class Universities at Shanghai Jiao Tong University in China.

Taking a look at the criteria and indicators used in these ranking surveys can be useful in determining possible areas of focus in the effort to improve faculty research productivity at universities in Thailand, specifically Assumption University. The Times Higher Education (THE) annual ranking (THE, 2014), for example, assesses world universities in terms of four “core missions”: teaching, research, knowledge transfer, and international outlook. THE further breaks down the rankings into 13 “performance indicators” grouped in five areas.

By far the most important indicator, accounting for 30 percent of the overall ranking and termed the “flagship” factor by THE, is the number of times a university’s published work is cited by scholars globally. The ranking draws upon 50 million citations from up to six million journal articles published in the five previous years, using data from 12,000 academic journals monitored by Thomson Reuters.

The second most important factor in THE rankings is reputation for research excellence among peers, as indicated by number of publications in quality peer-reviewed journals. A third area, similarly related to research, is termed “international outlook.” It measures the proportion of a university’s research journal publications that have at least one international co-author, along with the ratio of international to domestic students at the university and the ratio of international to domestic faculty.

THE rankings incorporate teaching as an important area as well. In that regard, THE stresses the importance of research to quality teaching: “We believe that institutions with a higher density of research students are more knowledge-intensive and that the presence of an active postgraduate community is a marker of a research-led teaching environment valued by undergraduates and postgraduates alike.”

In the period since THE rankings began in 2004, Assumption University has yet to be included in the annual rankings. The reason flows from the basic criterion for inclusion, as stated by THE (2014): “No institution can be included in the overall World University Rankings unless it has published a minimum of 200 research papers a year over the five years we examine”. In its most productive year, 2011, AU saw its researchers across all fifteen schools publish a total of 166 papers.

The Shanghai Rankings have a reputation for being more focused on scientific disciplines: mathematics, physics, chemistry, computer science, and economics/business. The criteria employed by the Shanghai System in ranking world universities are as follows: alumni winning the Nobel Prize and other academic awards; current staff winning academic awards; highly-cited research; and percentage of papers published in top-ranked journals. AU has yet to make the Shanghai Survey rankings.

According to the *Nation* (2013), three Thai universities have produced enough research to be considered and ranked in the THE 2013-2014 survey: King Mongkut’s University of Technology Thonburi (ranked 55th among Asian universities and third among universities from ASEAN countries); Mahidol University (61st, and 4th respectively); and Chulalongkorn University (82nd and 5th).

A total of six Thai universities participated in the 2013-2014 rankings: Mahidol and Chulalongkorn (which have participated since 2010), and KMUTT, Chiang Mai, Kasetsart and Thammasat, which all took part for the first time in the current survey.

In the overall rankings, King Mongkut's University Thonburi (KMUTT) became the first Thai university to make it into the group of 350 top universities in the world. KMUTT president Associate Professor (sic) Sakanindr Bhumiratana told the *Nation* newspaper that KMUTT had risen in the THE rankings due to a focus on research and on collaboration with stakeholders. He said that if the Thai government would earmark more funds for research, Thai universities would have a greater chance of competing successfully in the rankings. He noted that from 2010 to 2012 the Thai government had allocated only 3.3 billion baht to be divided among nine research universities in Thailand (*The Nation*, 2013). Given this situation, half of the KMUTT research budget now came from the private sector.

Although Assumption University has yet to be considered in the THE rankings, it has been listed by several web-based organizations whose rankings are generally considered less prestigious than THE rankings or the Shanghai Survey. For example, Academy Rank (2014) rated AU number 1723 among world universities in 2014, while the Webonomics Ranking of World Universities (conducted each six months by the Cybermetrics Lab of the Spanish National Research Council) placed AU at number 1710 worldwide and at number 26 in Thailand as of January 2014, a slight drop from the July 2013 rankings.

Part 2: Analysis of Interview Data: National and International Experts:

Diverse Perspectives and Views on Thai research

In the next part of the research method, interviewees (national and international experts) were given the opportunity to offer their perspectives on the current state of faculty research in Thailand. They were asked to comment on two factors. First, on the skills they view as most important for research productivity and on the degree to which those skills are present or lacking among research faculty in Thailand. And second on what they consider to be the principal obstacles to excellence in faculty research.

In response to the first factor, interviewees tended to focus on three themes: lack of research skill; lack of language skill; and lack of analytical skills. In their comments on the second factor, obstacles facing Thai researchers, a wider set of themes emerged including: insufficient support; insufficient resources; motivation; research atmosphere; time management; distractions from research; and aspects of Thai culture.

A. Skills

1. Research Skills
2. Language Skills
3. Analytical Skills

B. Obstacles

1. Support
 - 1.1 Government Support
 - 1.2 Private Sector Support
 - 1.3 Institutional Support

2. Resources
3. Motivation
4. Research Atmosphere
5. Time Management
6. Distractions from Research
7. Aspects of Thai Culture

A. Skills

1. Lack of Research Skills

Several interviewees stressed the relative lack of PhDs among the faculty at Assumption University. One national expert observed that holding a lesser degree, such as an MA or MBA, did not provide adequate exposure to research methods and skills.

One international expert expressed that view that PhDs awarded in Thailand did not always include sufficient grounding in research; for the time of being at least, PhDs obtained at international universities assured stronger research skills. Two national experts maintained that when faculty members have a weak background in research, graduate students can be adversely affected due to a lack of inspiring mentors, thereby reinforcing a negative atmosphere for research.

Nonetheless, while half of the most active researchers have a graduate degree from an international university, three out of four most active faculty members in doing research obtained their PhDs from universities in Thailand. All of them mentioned that the most important skills that they had learned and developed were from mentors and advisors. One said, “I had a great advisors in my master’s and doctoral programs who inspired me to do a large amount of research. Fortunately, since my graduation, I have a great mentor who has helped me so much in coaching

how to get a research grant. They all helped me learn and develop research skills.”

2. Lack of Language Skills

Two international experts commented on the culture of research in Thailand. One opined that traditional Thai culture does not have a deep history of communication through writing and remained to some degree an oral culture, with much work done through talking with people and less through reading. Another expert offered his personal opinion that in contrast to the many positive legacies of Thailand never having been colonized, English language skills in Thailand were not as strong as in former British colonies such as Malaysia and Singapore. This constituted a serious hindrance to international research. The interviewee suggested that Thai researchers should seek international partners for research whenever possible. Because Thais have a reputation of being pleasant to work with, it should not be difficult to find partners. And such team projects would facilitate the production and editing of world-class research.

3. Lack of Analytical Skills

Several international experts zeroed in on the need to promote critical thinking skills in Thai universities. One cited what he termed the “anti-confrontation” reflex in Thailand. Teachers do not challenge their students enough, “he said, “and they do not accept challenges from their students.” Another international expert with a leading international organization urged that methods be found to increase the level of analytical skills in Thai research. In his view, improvement should be pursued in “strategic thinking, synthesizing, and summarizing.”

Mr. Robert noted that among the obstacles to analytical research excellence in Thailand, one could not ignore the sharp political polarization that has plagued the country in recent years. Funding is always a major challenge, and there is a danger that research funding may become a source of contention between red shirt and yellow shirt groups at certain universities. Once a source of funding has been identified as linked to one side, the other side may resist it.

Mr. Robert also mentioned that research is affected by the fact that some politically sensitive subjects are off limits for commentary in Thailand. Finally, he defended the liberal arts tradition of education, which encourages a wide range of interdisciplinary coursework across disciplines in the early undergraduate years. Robert felt that without this broad exposure, researchers risk having a narrow view of their discipline later on.

B. Obstacles

1. Support

1.1 Government Support

Dr. Yongyuth Yuthavong, Acting Director of Thailand Graduate Institute of Science and Technology, NSTDA since 1998, Former Minister of Science & Technology concentrated his remarks on the need for more government funding for R & D in Thailand. Traditionally, the level of government support had been “very poor” when measured as a percentage of GDP. The current average of overall R & D spending in the developed world was estimated at between 2 and 4 percent of GDP, with up to 70 percent coming from the private sector and 30-50 percent from the government. In the developing countries, the average was between one and two percent. “We must correct this weakness,” Dr. Yongyuth declared.

Previous governments had talked about the importance of research, but little

had been done to address the problem. Looking to other countries in ASEAN, Malaysia had achieved an average level of spending on R and D at 1 percent of GDP while Philippines was improving rapidly and Indonesia was rising from a level similar to that of Thailand. Elsewhere in Asia, South Korea had reached a level of 3-4 percent of GDP.

In recent years, the Thai private sector had become more interested in funding research, but only large companies such as PTT, Detagra and SCG had engaged even to a limited extent, while there had been no increase in government support. Due to the poor funding of faculty research and low salaries, many Thai university researchers turned to moonlighting or set up institutions outside of the university. In the process they sometimes earned more money, but lost interest in doing research. To lose interest in that way was to lose research acumen. “University research is like a marathon race,” Dr. Yongyuth declared, “so you have to keep running; since the marathon is long, once you fall behind you tend to give up and earn money from other things.” Five years ago, Thailand was number two in ASEAN for research, in spite of all the obstacles. Now it has slipped further behind countries like Singapore and Malaysia.

Dr. Yongyuth urged that Thailand adopt new principles to meet the challenges of research productivity in higher education. Improving governmental and institutional policy would be important, but perhaps the most important factor was the personal motivation of individual Thai researchers. His recommendation to university leaders would be: money, motivation, and creating time for research by reducing teaching hours and administrative duties. He mentioned Professor Dr. Stang Mongkolsuk, the first dean and the founder of Faculty of Science, Mahidol University, as someone who had successfully followed those principles. Dr. Stang

had been an outstanding mentor who awakened curiosity and motivation in his students, showing that science and research could be “fun” while actively recruiting students to his research laboratory.

Dr. “Zhang” with an influential international agency said that the primary obstacle facing faculty research in Thailand was lack of government support. In his view, universities should be the driving force for economic and social development, not by focusing on teaching, but by emphasizing quality research. Thailand should establish mechanisms whereby the government could set aside an annual budget for research. These government funds could then be channeled to the universities.

On this basis, Dr. “Zhang” recommended four concrete steps: 1) The government should make research investment a national priority and provide an annual grant to universities for research and infrastructure, to include buildings, research equipment, and upgraded libraries; 2) the government should establish effective and transparent means to distribute research funds; 3) a relative balance between basic and applied research should be maintained, with more money channeled to applied research in the near term and with an expanded role for the private sector in research funding; 4) quality research should become part of Thai university culture, as “right now it seems very ok for Thai faculty members just to teach.”

Dr. Sawas, former Director of the Thailand Research Fund (TRF), noted that over the past twenty years there had been attempts to encourage Thai university faculty to do more research, but the situation remained disappointing compared with other countries. Thai research expenditure represented just 0.2 per cent of GDP, while the average rank of IMD is 1% of GDP. Other countries such as Japan, Taiwan and Korea invest 2%, 3%, 4% or even 5% of GDP in research. These countries also have

a much higher GDP to draw from. The Thai GDP is only a trillion baht, so 0.2% is equal to 20,000 million baht. If Thailand were closer to the world average, the annual investment in research would be 100,000 million baht.

Dr. Sawas looked back on the establishment of the National Research Council of Thailand (NRTC) in 1959. This had been a worthwhile initiative, but since its founding not enough government support had been provided. In addition, the National Research Council has been hampered by a bureaucratic system.

For the past five years, the Office of Higher Education Commission (OHEC) has made an effort to identify nine universities in Thailand as research universities. Unfortunately, there has not been enough continuity among these various programs. But some progress has been made in numbers of researchers. Today, Thai research personnel are less than ten per 10,000 of the Thai population; a few years ago this figure was 6 or 7 per 10,000. Now the National Science Technology and Innovation Policy Office has a plan to increase the national research budget from GDP to 2 per cent per year and to increase research personnel to 25,000 over the next ten years. But until the Minister of Science and Technology commits to a rapid increase to at least one percent of GDP, which has yet to happen, the situation feels almost hopeless at 0.2% of GDP.

Dr. Sawas was pleased that some Thai universities received support from Western countries. For example, due in large part to the efforts of Dr. Stang, Mahidol University has received funding from the Rockefeller Foundation. In addition, the Thailand Research Fund (TRF), and the National Science and Technology Development Agency (NSTDA) have made some contributions. The TRF divides research into basic research and R&D; it does not use the term “applied research,”

and counts R&D as applied. Of the TRF budget, 70% goes to science and technology; the rest is for social science, humanities, and community research.

Social science and humanities tend not to have strong research projects, and many capable researchers end up going to work in the private sector for additional income. In general, Dr. Sawas focused on the importance of creating incentives, whether financial and otherwise, to promote research. During the past twenty years, both the Thailand Research Fund (TRF), and the National Science and Technology Development Agency (NSTDA) had attempted to motivate more research in Thai universities through research funds and research grants. Such an incentive system makes research more attractive and can help faculty members to supplement their income, thereby lessening the likelihood of faculty moonlighting. However, here again not enough had been done. Dr. Sawas concluded by saying that he was not happy with the Thai situation today in comparison with other countries.

1.2 Private Sector Support

Dr. Yongyuth concentrated his remarks on the need for more government funding for R & D in Thailand, but also raised the issue of support from the private sector.

Traditionally, the level of government support had been “very poor” when measured as a percentage of GDP, while private sector support for research in Thailand remained far below the norm for developed countries. The current average of overall R & D spending in the developed world was estimated at between 2-4 percent of GDP, with up to 70 percent coming from the private sector and 30-50 percent from the government. In the developing countries, the average was between 1-2 percent from the government, with 50 percent coming from the private sector.

Thailand has fallen far behind in both government and private sector spending on research, and as a result the overall spending on R & D today was a mere 0.25 percent of GDP. “We must correct this weakness,” Dr. Yongyuth asserted.

Previous governments had talked about the importance of research, but little had been done to address the problem. Looking to other countries in ASEAN, Malaysia had achieved an average level of spending on R & D at one percent of GDP, while the Philippines was improving rapidly and Indonesia was rising from a level similar to that of Thailand. Elsewhere in Asia, South Korea had reached a level of 3-4 percent of GDP.

In recent years, the Thai private sector had become more interested in funding research, but only large companies such as PTT, Detagra and SCG had engaged even to a limited extent, while there had been no increase in government support. Due to the poor funding of faculty research and low salaries, many Thai university researchers turned to moonlighting or set up institutions outside of the university. In the process they sometimes earned more money, but lost interest in doing research. Five years ago, Thailand was number two in ASEAN for research, in spite of all the obstacles. Now it has slipped further behind countries like Singapore and Malaysia.

1.3 Institutional Support

Dr. Prapon, a former professor of biochemistry at Mahidol University and recipient of numerous national awards for research, emphasized that the key to quality research is adequate funding. He asserted that one of the best ways to assure this result would be to establish “a national funding agency.” If universities have to depend on international or private funding alone, the goals their research may be forced to pursue may not be in the national interest. Thailand should have a national

funding agency with a vision of what is best for Thailand's development. In his view, Singapore provides a good example of such a top-down approach. The Singapore national agency recognized that the country was not in a position to compete in electronics, so it has successfully directed research funding into technology.

Because Thailand lacks a national policy, it is left to university administrators to set research priorities. All too often, a university will set new quantitative research guidelines, such as calling for an immediate increase of 10 percent in university research papers, aimed primarily at meeting bureaucratic Key Performance Indicator (KPI). "Unfortunately," Dr. Prapon lamented, "they set up the goal, but they do not provide the facilities or the money to meet that goal. It is all about the budget and setting national priorities."

Dr. Finley, a professor at the University of Minnesota who has been actively involved with Thailand for more than 20 years, noted that due to a lack of institutional support, some Thai researchers end up moonlighting to supplement their income. Consulting in the private sector often pays more than teaching, and an extra teaching job outside the university tempts many.

Dr. Finley added that a limitation on travel funds also adversely affects research by making it difficult for Thai researchers to participate in international project programs and conferences. Dr. Finley said he had just returned from a conference in Pittsburgh, and in fact most international conferences in his field tended to be held in Europe or the United States. For now, at least, few major research conferences were held in Southeast Asia. Thus such conferences remain expensive for Thai researchers, and some funding support in this area could be most beneficial. Similarly, researchers in science and technology could use more funding for equipment, materials and computer programs.

Dr. Gerald Fry, Distinguished Professor at the University of Minnesota involved with Thailand since the 1960s, stated that in Thailand, and also in the US, significant resources had been devoted to “bricks and mortar” at university campuses. Now the time had come to focus more funding on research and development. Without such investment, Thailand risked falling into the “middle income trap” that plagued many developing countries.

Dr. Fry noted that using rational choice theory would suggest creating a system of incentives to promote higher research productivity at AU and in Thailand. It would be essential to critically analyze Thailand’s current situation in comparison with the experience of other countries. For decades, Japan emphasized applied research before moving toward basic research. This could be a good model for Thai research development. Thailand could focus first on applied research in the Thai context and then move naturally toward basic research. This could benefit the Thai economy and society in the process.

Among the ASEAN countries, the Philippines provided another excellent example of such a focus on applied research. Philippine studies of rice production had helped farmers to become more productive. Similar Thai research could be envisaged in regions such as Isaan, where wild food production presented an opportunity. Also Thailand has tremendous potential for the development of alternative energy resources such as wind and solar power.

Several respondents lamented the fact that due to lack of institutional support for research, many researchers at Assumption University become distracted by a high teaching load or by moonlighting in the private sector to supplement income. Being “derailed” in this way made it difficult for potential researchers to maintain their focus. One foreign expert stated: “If you lose touch with research methodology for

three years, you might as well say goodbye to research.” A Thai expert echoed this sentiment, saying: “University research is like a marathon race; you have to keep moving, and once you fall behind you tend to give up.”

2. Resources

Most international experts singled out library resources and lack of access to international databases as a problem for Thai researchers. Dr. Fry noted that Thailand is rich in data due to the work of the National Statistics Office, while several universities have good information systems and libraries. However, not enough has been done to assure online access to these resources, resulting in the need to travel to various locations to find data.

Dr. Finley said that Thai researchers should be given more training on how to use those databases that did exist. He also pointed that if it is not easy to get access to the e-journal, there should be supportive librarians to assist.

3. Motivation

Dr. Somwung, Vice President for Research Affairs for Chulalongkorn University since 2000, offered a critical assessment of the history of university research in Thailand. He described Thailand as a “techno-relation” society, one that depends on friends and relatives and tends to use power and authority, rather than knowledge, to fix problems. He recalled that fifty years ago, Thai universities produced students to work as civil servants. Thirty years ago, the focus shifted to preparing students to work in the private sector. Throughout this period, Thai academics have tended to rely in their teaching on the research of others rather than conducting their own research. During the past twenty years, research has played a

somewhat greater role, but the basic motivation for most Thai researchers is academic promotion rather than the desire for knowledge.

Since the financial incentives are not long lasting, and because many faculty researchers are not motivated by internal passion, few faculty members progress to the assistant or associate professor level, and full professors are exceedingly rare. Private universities have an even harder time in Thailand as they are newer and have less access to the small amount of public funding that does exist.

Dr. Somwung lamented that economic advancement had become the prime motivator in Thai higher education. According to recent studies, only two professions -doctors and teachers – were less under the influence of money. But it appeared money was coming to have power over these fields as well. Current trends indicated that younger people had come more under the sway of economic factors even than older generations.

Dr. Somwung noted that doctors conducted some of the best research in Thailand today, both basic and applied, with observable benefit to the society. Since Thailand remained primarily a service economy, many people failed to see the need for investing in R and D, which represented a strikingly low 0.2 percent of GDP. In conclusion, Dr. Somwung stated that agriculture is the most promising field for investment in research and development to strengthen the Thai economy.

Dr. Praon stressed the importance of mentorship in motivating quality research. In his words, “What I am worried about for the research today is the lack of mentorship. In science, it is apprenticeship. In all the Noble Prize winners’ speeches, they always thank their mentors. But the problem is we lack mentors.”

4. Research Atmosphere

Dr. Finley stated that the primary challenge to increasing research productivity in Thailand is the research atmosphere at most Thai universities. In Dr. Finley's view, "there is not much of a culture around doing research; the dominant part of the culture is university teaching."

Dr. Finley recommended that the atmosphere conducive to research should be fostered at the level of each school, at the level of the peer group. In Thailand as in most countries, the social context was important. If a researcher feels surrounded by a peer group engaged in quality research, with mentors nearby, research productivity will increase. Another foreign expert recommended that Thai universities move toward smaller seminars rather than large lecture classes, with more interaction among students and lecturers.

Dr. "Zhang" also felt that professorships were too difficult to obtain in Thai universities, removing a key incentive for research. Exceedingly few faculty members progressed to the level of full professor, and some university presidents in Thailand were merely assistant or associate professors. He suggested that Thailand move toward more of a "publish or perish" culture for faculty research, as in the US and other countries.

5. Time Management

Dr. Fry singled out time management issue as another obstacle to research productivity. Of course, many Thai faculty members are required to take on a heavy teaching load, which reduced the time available for research. But in addition to this, it often appears that Thai researchers do not make effective use of the time that is

available. In Dr. Fry's opinion, many Thais spend an inordinate amount of time on Facebook and other social media. Thai researchers are no exception to this. Of course, life events, such as having a child, can present a challenge to time management and even "derail" research projects. But Dr. Fry said he knew of cases where female researchers hired household servants and thus freed up time for professional work and travel.

Dr. Yongyuth summed up the time management problem with the following statement: "University research is like a marathon race that you have to keep running. Since the marathon is very long, once you feel so much behind, you might give up and earn money from doing other things."

6. Distractions from research

One distraction from faculty research arises when faculty members are called upon to take on time-consuming roles in university administration. As Dr. Sawas pointed out, in many cases capable and promising researchers are moved over to become a chairperson or even dean. They no longer have the time or energy to conduct focused research, and the university thus loses a capable researcher.

Dr. Praon cited the example of a female researcher in nutrition at Mahidol University who, in addition to being a department chairperson, was also asked to help in administration for another university campus. These tasks drew her time away from doing research.

7. Aspects of Thai Culture

Several international experts stressed the importance of Thai cultural patterns in evaluating the current state and future prognosis of research productivity in Thailand.

One expert noted that a number of research topics remain off limits in Thailand due to cultural norms. For example, there clearly are potential restrictions to any research that might involve the monarchy in Thailand.

Dr. Fry felt that a deep Thai tradition affected the culture of research in Thailand: the fear of losing face. He noted that some studies described Thailand as an “affiliative” society, based on the influential work of Weerayudh Wichiarachote in “The Theory of Affiliative Society” (1973, 2014).

Based on Dr. Fry’s observation, a closer look at the “affiliative” theory is in order. Weerayuth argued that society in Thailand is strongly influenced by the tradition of “*kreng jai*,” which can be translated as “consideration” or, more literally, “awe heart” or, as Weerayudh terms it, “respectful fear.” This concept, which may derive in part from Thai Buddhist culture, entails not forcing another person to feel belittled or “lose face.” Weerayudh described how in Thailand, “*kreng jai*” and exchanging favors with others allow people to feel a measure of security. This pattern depends, however, on “superior-inferior” (in Thai, “*phooyai-phoonoi*”) relationships throughout society (Mulder). People in a dependent position seek security thorough the patronage of those in a superior position.

Other observers of Thai culture have come to similar conclusions. Klausner (1981) has written about the “partisan-entourage” syndrome in Thailand (which he calls “*phak phuak*” in Thai), while Lucien Hands (1978) maintains that Thai society is held together by tightly bonded patron-client groups. Mulder agrees with Weerayudh that “*kreng jai*” has a measure of fear in it, specifically the fear of insignificance in the face of superior persons or groups.

In his analysis of Thai culture, Weerayudh concludes that Thailand is an

“affiliative” society, which he contrasts with “achieving” societies in the western world. He produces a chart to list the opposing traits that characterize each of the two cultural patterns. For example, in affiliative societies such as Thailand, the basis of authority is experience, while in achieving societies the basis is reason. In the former, the status structure is based on hierarchy and seniority, rather than on fraternity as in the latter. Communication is closed in one with a fear of expressing opinions, but open in the other, with a free exchange of ideas. Social relations in affiliative societies feature high interpersonal dependence and the fear of being evaluated and losing face, whereas in achieving societies self-sufficiency is promoted.

Weerayudh adds the following additional characteristics to the affiliative society paradigm he finds in Thailand: low self-confidence; low self-respect; a tendency to seek immediate rather than delayed gratification; conformity rather than creativity; and education based on memorization rather than critical thinking.

Critics of Weerayudh’s analysis of Thailand argue that its basic premises contain a cultural bias that sees assertiveness as a negative personality trait.

Part 3: Interview Analysis: AU Administrators' Viewpoints

One top administrator, “Karuna,” questioned making research an overriding priority in Thailand, asserting that research “is not the Thai way.” People should understand the culture of Thailand, not just Western attitudes, and Thai researchers should not just “render service” to Western research projects. Not everyone should be required to do research, especially at the expense of training in spirituality, in improving people’s mindset. Another administrator, “Visanu” believed that researchers at AU lacked concentration. Even if they had fewer teaching responsibilities and more time for research, it was not clear that they would actually do more research.

In contrast, other leading administrators called for a greater focus on research at Assumption University. Several noted that Thai universities should move beyond producing textbooks, which in their view did not constitute true research. In their view, AU at present lacked an overall atmosphere conducive to quality research in part because it had long promoted itself as primarily a teaching university. As “Rama” put it: “AU has promoted itself as a teaching university for too long.” In the future, it would be necessary to create new incentives and motivate faculty members to focus more on research productivity.

One interviewee, “Laksamee,” recommended a “push and pull strategy” that would make commitment to research a part of each university contract, while at the same time providing more funding. For example, a department contract could specify that each faculty member should produce at least one research paper each year, or face termination of the contract. “Visanu” urged linking the assessments of

research conducted by ONESQA and OHEC to actual funding. Research projects awarded points by those two agencies would automatically be rewarded with increased funding, creating new incentives for strong research.

“Visanu” assigned “grades” to the current state of research at Assumption University: B for overall research, although this respondent noted that research productivity was highly uneven across schools; D for budget and funding; and B minus for facilities. The interviewee lamented that many potential researchers at AU found the process of acquiring funding “too complicated” and thus limited their activities to teaching. “Visanu” also felt that a heavy teaching load sometimes prevented AU faculty members from taking on research. Responsibility for addressing this situation should rest primarily with each individual school and its leadership.

“Visanu” pointed to the fact that AU scored poorly on the Office of Higher Education Commission (OHEC) evaluation of research, primarily because of inadequate funding. Thus, although AU passed an Office of Higher Education Commission (OHEC) overall evaluation, it still fell short on research. One key problem was that as a private university, AU did not qualify for government funds the way public universities did. The strongest schools for research at AU have been Business, and Science and Technology. However, even in these schools, research had declined recent

Part 4: Analysis of Interviews with AU Faculty

Extreme Case Analysis

Faculty Members Most Active in Doing Research

The most productive faculty researchers at Assumption University all mentioned having an inspiring mentor as a key motivating factor. They also concurred that funding should be increased for research, with several advocating rewards for actual research publications rather than for presenting papers at conferences.

One respondent, “Tida,” complained that internal procedures at AU were too slow and unfair sometimes. As an example, the respondent cited the case of a student who needed financial support for a promising research project. The project had been peer-reviewed and approved by three external readers. However, when the project came before the internal review committee at AU, it was rejected. The student subsequently was offered a scholarship at an international university and left AU. It sometimes seemed that personal considerations and even conflicts entered in to such decisions at AU.

One interviewee, “Wilai”, with over 30 articles published in international journals, also felt that organizational support for faculty research could improve at Assumption University, declaring: “I don’t care how much the policy changes; I care how much I can develop myself as a researcher. If I cannot change the policy, at least I can change myself.”

“Nangfah” said that of course Assumption University remained devoted to teaching. However, the respondent believed that faculty research also benefits students and can contribute to AU’s reputation for excellence in teaching. Strong

faculty research could be an inspiration for students and provide mentors and role models for their own productivity. The interviewee had learned much from a faculty advisor, who had even brought books back from international conferences to give to his students. Now, this faculty member enjoyed encouraging and helping colleagues, while seeking to publish at least two research articles each year, ideally in impactful journals to help build AU's reputation for quality research.

“Nangfah” expressed satisfaction that the dean has created a research committee at AU to help other faculty, because doing research alone can be difficult. At present, it remained difficult to get funding from RIAU, and the process of doing so should be made more efficient and transparent. Approval from RIAU often took too long, and three out of five committee members had to approve any given research project, often in fields in which they had no background. The respondent felt that AU should always have a strong Vice President for Research, someone with personal experience in research and knowledge of research policy.

One of the most active researchers, “Thep” said that good research depends on three factors: intellectual development, concentration, and willingness to sacrifice. The goal must be to become a career, “professional,” and in order to grow in the academic profession, it was necessary to conduct research. However, the interviewee mentioned two recent negative trends that may have caused a fall-off in research productivity. First, the incentive payments of up to 100,000 baht for publishing in an “impactful” journal might be ending; and second, full funding for presenting papers at conferences abroad had declined from 5 papers each year to 3 and now to 1. This faculty member concluded that two future goals would be to secure a co-research grant with a public university, and to develop a Master's program that would create a group of teaching assistants and research assistants to aid with faculty research, as in

the US.

Faculty Members Least Active in Doing Research

Most of the least active faculty interviewees complained that they lacked research skills. Many of them said they have their own interests other than doing research. Half of them prefer to pursue their business interest. Others are happier earning more income by doing extra teaching.

Many of the least productive faculty researchers claimed that heavy teaching loads and administrative responsibilities prevented them from producing more quality research. “Petcharat” noted that during the fall semester of 2013, Assumption University started a program of research training. The program met only once during the semester for less than a day. The trainers discussed research methodologies and assigned research topics, but “they were not interesting topics.” The new policy implemented in 2013 also provided some funding for published research, including in department journals. Nonetheless, the respondent admitted that in their own case it had been difficult to focus on research due to family responsibilities and the family business

Another “least productive” faculty member “Mukda” agreed that a heavy teaching workload was an obstacle to research. This respondent felt that most Thai faculty who engage in research do so primarily to get promoted and obtain a higher income, not to “find an answer” through quality research. Assumption University made some efforts to promote research, but only occasionally and not enough. The interviewee concluded with the observation: “The research environment is the most important factor for me; if my colleagues and my friends are happy with doing research, I will do like them.” But the respondent quickly added: “If doing research

is not a mandatory part of the contract for being a lecturer here, I will not do it.”

“Taptim” declared that research is “difficult, tough and threatening.” After working for many years, this interviewee no longer had confidence in doing research. Research made this lecturer nervous out of a fear of being sued over some inappropriate reference to a famous author (see Streckfuss, 20). Assumption University has long been perceived as a teaching university, and thus “it is so sudden to just announce that faculty should do research.” The respondent regretted that no mechanism existed at AU for establishing the number of teaching hours required of each faculty member in relation to the time required to do quality research.

The respondent also felt that the most important factors in promoting faculty research were adequate budget, a leader who encourages research, good facilities, and staff support. Trust in school leadership played an important role. This faculty member had the impression that some university leaders were “unfair” and might even take research ideas and give them to someone else, which made the respondent less inclined to get into research. “Taptim” noted that because salaries were too low, many faculty members at AU felt compelled to engage in moonlighting. People in Thailand respect doctors and teachers, but the crucial difference was that teachers don’t earn much money, unlike doctors. “How can a person be creative,” “Taptim” asked, “when they need money?”

Amphan complained that faculty members are expected to work a set number of hours at the university, including in one case staying an extra 18 hours on campus to advise students who seldom showed up during office hours anyway. In addition, the school had made it difficult to participate in business activities outside of the university.

Part 5: Summary of Themes

Taken as a whole, the interviews described in chapter 2 resulted in a clear picture of the problems facing research productivity at Assumption University. Six themes emerged most prominently: funding, government support, limited prospects for advancement, faculty research skills, aspects of Thai culture, and the balance between research and teaching.



Figure 19. Primary Themes from Case Study Interviews

Funding

The theme mentioned most often by interviewees of all categories was the importance of adequate funding for research. For the least productive researchers, lack of funding created an incentive to seek out moonlighting opportunities and

private business opportunities outside the university. For the most active researchers, inadequate funding presented an obstacle to further research.

For AU administrators, the funding problem seem to reaffirm AU's traditional role as primarily a teaching university. And for national and foreign experts, lack of funding was often framed as part of a larger problem-that of inadequate government support for research in Thailand.

Some of those least active in research felt compelled to seek out moonlighting opportunities to offset what they perceived as low salaries and lack of funding opportunities. Others actually seemed to prefer to be involved in private sector activities and did not seem to see a way to combine this with research.

Government Support

International experts tended to warn about a lack of effective government policy on research, especially in comparison to developed countries and other countries in Asia. Indeed, for interviewees such as Dr "Zhang", strong national research depended on a focused national strategy that provided resources and direction to university research. For such experts the contrast between government support in countries such as Singapore or South Korea, and the situation in Thailand told the whole story.

Assumption University administrators tended not to emphasize the role of government in funding research. Instead, they appeared to focus more on internal funding issues. They also pointed to the fact that as a private university AU has less access to government funding. In many other countries private universities are part of national research strategy and are eligible to receive government fundings.

Limited Prospects for Advancement

Another theme frequently commented upon was the structure of AU faculty positions. The overwhelming majority of faculty at AU never rises above the position of lecturer (see chart at page 8). International experts and AU faculty alike pointed to the near total lack of full professorships even in schools with a high percentage of faculty Ph.D.s, such as the School of Science and Technology. Limited prospects for advancement may eliminate an important incentive to research productivity. In addition, it is likely that full professors and associate professors, of which there are also surprisingly few at AU, would be most likely to make research a priority. Many experts and most active researchers felt strongly that experienced mentors are important in inspiring and training quality researchers.

Faculty Research Skills

A number of interviewees raised the question of faculty research skills at Assumption University. Several argued that only a Ph.D. degree can prepare a faculty member to do quality research. Thus schools at AU with a majority of M.A.s on their faculty faced a disadvantage.

International language skills were also mentioned as an important skill for world-class research. Several international experts believed that because Thailand had never been colonized, English language skills were not as strong as in countries such as Malaysia and Singapore.

In the case of AU, however, a majority of faculty members has studied abroad and holds advanced degrees from international universities. Two aspects of the situation are worth highlighting. First, the data revealed no clear difference between the amount of research produced by faculty members holding Ph.D.s from

abroad and those holding a Thai Ph.D. Second, in light of low research productivity at AU, one interviewee suggestion may prove useful, namely that Thai researchers should actively seek out English native language partners to produce research that meets international standards.

Aspects of Thai Culture

International experts raised additional impediments to quality research that they considered specific to Thailand. In that regard, some expressed concern about basic analytical skills. Thai culture tended to emphasize consensus and to avoid potential confrontations that could cause someone to “lose face.” Thailand is widely perceived as an “affiliative society” that seeks community and consensus. Without an open and frank exchange of ideas, the feedback essential to critical thinking could be constrained. Also, Thai cultural patterns strike some international observers as incompatible with a competitive “publish or perish” university culture. It is noteworthy that AU administrators appeared divided about whether it would be a good idea to move toward a more openly competitive academic environment.

Research versus Teaching

Many interviewees complained that a high teaching load and administrative responsibilities further distracted from a focus on research at AU. Numerous respondents mentioned AU’s traditional reputation as a teaching university. Some indicated that this legacy may contribute to a perceived lack of direction and an ambivalence among AU administrators about making research a priority. Specific problems that could result include inadequate funding and long research-approval times by the Research Institute of Assumption University (RIAU).

The vision and mission statements of Assumption University mention both teaching and research as important goals. However, the interview results suggest a clear difference of views about the proper balance between these two goals. Some interviewees believed that AU should remain true to its tradition as a teaching university, while others considered that tradition an obstacle to research. Significantly, several of the most active researchers at AU rejected this dichotomy. They echoed the conclusion articulated by the Times Higher Education rankings (THE) that strong faculty research in fact contributes to teaching excellence.

Concluding Remarks

Much detailed information has been provided on the research climate and the research productivity of faculty members at Assumption University, a major private university in Thailand and its first international university. Through the use of extensive triangulated data, major institutional and individual factors influencing research productivity have been identified and are summarized in Figure 18 above and also in Figure 19 below, a tetrahedron model. The four major factors identified in the model are complexly intertwined. A major distinctive feature of this study is its examination of how culture influences research productivity.

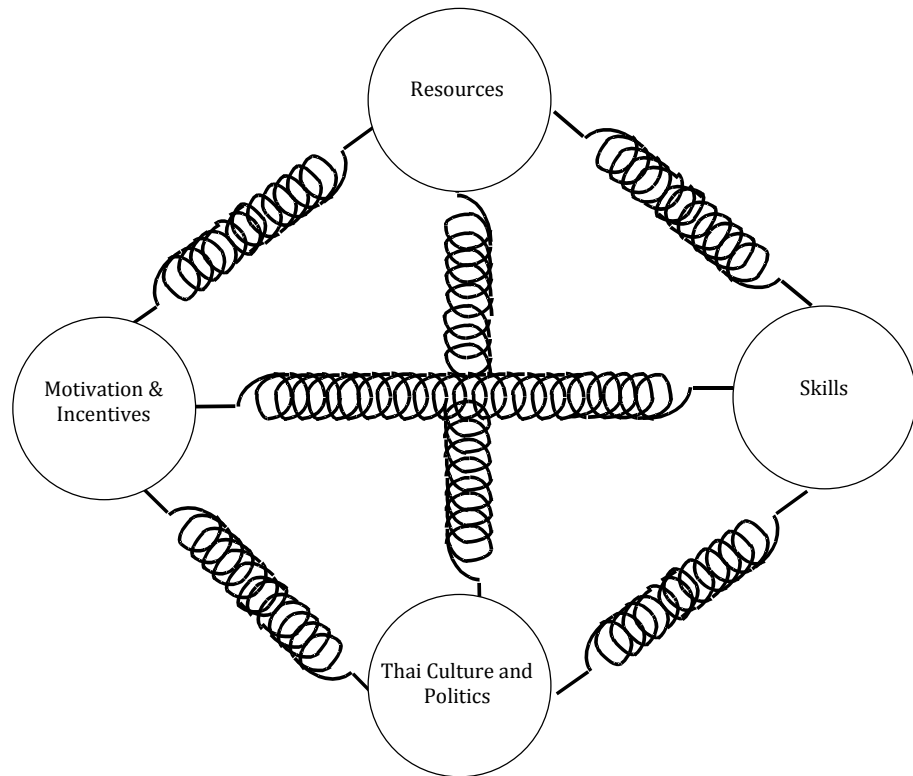


Figure 20. Tetrahedron Model of Thai Research Productivity

CHAPTER 5: DISCUSSION AND IMPLICATIONS

The results of the research presented in Chapter 4 have implications for faculty research productivity at Assumption University and for the status of research in Thailand more generally. At the university level as well as at the national level, Thailand must recognize trends and trade-offs in the field of research and set clear goals amid fast-paced globalization and rapidly expanding networks in international education.

Theory

The results of this study show the applicability of theories outlined in Chapter 1. As respondents described the various factors that have either inspired them to do research or posed obstacles to doing so, the relevance of rational choice theory emerged clearly. Without specific incentives, particularly the prospect of higher pay or advancement beyond the level of lecturer, the motivation to do quality research appeared lacking. Indeed, the amount of research conducted at Assumption University compared to some other universities in Thailand seems to support this assertion.

A number of respondents emphasized the effect of Thai traditional culture on university education and research in Thailand. As noted in the study, there have been numerous attempts to develop theoretical understanding of this important factor. The interpretation of Thailand as an “affiliative” society has much in common with theories of social capital outlined in Chapter 1, in particular Robert Putnam’s distinction between “bonding” and “bridging” social capital. The deep tradition of “*kreng jai*,” of avoiding confrontation and allowing others to save face, has much in common with “bonding capital.” Both serve to hold society together thus can be considered a source of strength and identity for the nation. However, as several

international experts pointed out, this tradition is at odds with research culture in the west, where a more competitive, “publish or perish” atmosphere often prevails, and where teachers and students are freer to challenge each other, and provide critical feedback.

Several respondents – especially international experts – mentioned the need for more open debate in university classrooms and more openness between faculty and students at Thai universities. It could be beneficial to institutionalize more direct communication, and to create feedback loops at all levels that could help decision makers to gauge the status of research at their university.

The importance of social capital, especially “bridging” capital, also emerged in the survey findings. Many respondents viewed research as, ideally, a collaborative process, both within the university and most usefully with international partners and mentors. A key type of bridging capital inspires the recommendation of several international experts that Thailand create a “triple helix” of more extensive cooperation among the government, the private sector, and universities to generate quality research.

Finally, the danger of a “middle income trap” was mentioned by several interviewees. In general terms, the responses of many participants add up to a portrayal of Thailand as caught between two factors: the “bonding” capital of traditional Thai culture, and the pressure to develop more “bridging” capital in order to avoid the middle income trap. The key for Thailand may well be to find new ways to bring these two factors into a more dynamic balance. If so, investing more in human capital and research will be crucial in this effort.

Policy

Rational choice theories would argue that Thailand needs to create more incentives to motivate quality research productivity in Thai universities. Such concrete factors as higher salaries or greater prospects for advancement received frequent mention in the case study. At the same time, theories of social capital would indicate that Thailand needs to invest more in social and human capital to improve the quality of national R&D. In particular, the need for new forms of “bridging” capital within and between institutions came up in numerous interviews.

Against this backdrop, the question arises as to what policy role the Thai government should play in the future of national research. Two steps could be considered, based on the study findings:

First, the Thai government needs to recognize the importance of R&D to the future of the nation. This means providing support for research as a budgetary priority, with adequate funding and other incentives for quality research. It could also lead to the creation of new institutions to promote research more actively, as suggested by one international expert.

Second, the government could take the initiative to create more social capital in support of quality research. Many other countries that have made improvements in research have done so by creating networks that bridge institutions and sectors of the economy. Here the “triple helix” concept can serve as a useful model. For the triangle of government, private sector and universities to succeed, however, an active role from the top is important. Several respondents argued that commitment to a focused national industrial policy is perhaps the determining factor that has allowed some countries to move beyond the middle-income trap.

The pattern of responses indicates that international experts and observers

tend to stress the importance of a strong governmental role in promoting research more than is the case with Thai respondents. As debate on this issue continues, finding the proper place for government in the mix will have an impact on any effort to increase growth and productivity in Thailand in the coming years.

Thai government policy has recognized education as a necessary area for reform and improvement. But reform involves important trade-offs between priorities in education. Should the focus of national reform be at the level of private and secondary education, or should it shift more to quality research and development at the university level? Should Thailand prioritize a broadening or “massification” of education across the university spectrum, or should it devote more attention and resources to excellence in higher education, particularly in research quality at the strongest universities? What can be the optimal balance between these two priorities? In the view of international experts, Thailand would run a great risk if it ignored developing a national industrial policy that promotes quality research that will enhance Thailand’s competitive economic advantage (Michael Porter).

Some respondents emphasized that at this stage of its development Thailand should focus on applied research and the implementation of useful knowledge that can be of immediate benefit to the economy and society. One foreign expert recommended that Thailand look to its potential strengths in applied research. It should have a national policy to encourage research in such sectors as sustainable energy and tropical agriculture. As one example, this interviewee noted that a range of products could be developed and marketed from the mangosteen and other fruits that grow easily in Thailand. Applied research in this area could draw in the private sector in joint products supported by the government, private resources, and high-quality faculty research. The Rayong Institute of Technology, founded by the

Petroleum Authority of Thailand (PTT), provides a positive example of such an approach in higher education with its innovative energy research in Rayong.

Practice

Comments by most and least active researchers at AU point to steps that could be implemented in practice to lay the groundwork for improved research productivity. For example, research workshops or “clinics” could be established at AU and in individual schools. Indeed, schools such as architecture and music may have specific requirements that could be taken into account at more focused clinics within each school. These workshops and clinics could raise the profile of quality research and also provide a forum for training students and faculty in research practices. Other workshops could offer instruction on best practices in the writing of research grant proposals.

The university could also recognize the demand that exists for more effective mentoring in research. Each school should be encouraged to institutionalize mentoring as a higher priority. AU could institute a program to invite international “scholars in residence” to participate in research workshops in their field of expertise. This could help to open avenues to international research collaboration while exposing both faculty and students to quality research norms.

At the level of higher administration, it could be useful to study ways to make research processes more efficient. For example, the mechanisms for approving individual research proposals could be streamlined to permit more rapid turnaround. Also, clear signals from the top in support of quality research productivity could enhance the research atmosphere on campus. Top-level encouragement of collaborative research could also help to encourage AU researchers toward working with scholars from other countries on joint projects.

Another option would be to offer professorships to research faculty from other universities who have already established a reputation for quality research. China has done this, as has Singapore. Making this a budgetary priority could quickly increase AU's research profile. It would also provide experienced mentors to strengthen the research atmosphere and support other faculty and students in conducting quality research. These professors could come from a variety of sources: active researchers at other Thai universities; retired Thai researchers; or retired faculty researchers from overseas universities.

At the same time, research should also be made a more important factor in the hiring of new, younger faculty members at AU. Making this a key part of the hiring process would tell a new generation of AU faculty that, in addition to teaching, quality research is an integral part of their job description.

Assumption University could also focus more on developing joint research projects with Thai industry. As noted earlier, the Triple Helix paradigm is an optimal model for improved research productivity. However, it is hard to predict how soon the government of Thailand will succeed in creating a more focused national research policy. Rather than waiting for the governmental leg of the triad to emerge, Thai universities such as AU should find ways to increase research cooperation with the private sector.

The above suggestions all involve creating more "bridging capital." They will require increased funding to implement such ideas. For this to happen, AU would have to make research a higher budgetary priority. Resources could also come from the private sector through joint research projects that help the Thai economy. Collaboration with international researchers could also open up other funding sources. And at some point, more government support should be available as part of

a national commitment to quality research. Above all, the goal should be to invest in people, to create a cadre of quality research faculty that can inspire students, contribute to teaching excellence, and help build Thai prosperity while enhancing AU's global reputation.

At the level of individual researchers, a mixture of incentives based on rational choice theory will be essential to promoting quality and productivity. Positive incentives could include higher salaries and bonuses for quality research. This could help to remove the temptation of moonlighting cited so often by faculty respondents. Beyond this, successful faculty researchers should be rewarded with greater prospects for promotion above the position of lecturer. AU could perhaps benefit from a larger number of full professorships.

In addition, faculty should be afforded the incentive of adequate time for research. Many respondents noted that teaching and administrative responsibilities often left little time or energy to focus on research projects. This is one of the most complicated trade-offs that would face AU in any attempt to make research a higher priority. A creative balance between AU's traditional excellence in teaching and a new commitment to quality research would invariably require a larger faculty. This in turn would require increased funding in support of this new balance.

Rational choice theory can contain within it the notion of negative incentives. In addition to the positive incentives for research noted above, should Assumption University seek ways to make research productivity more compulsory? One respondent noted that faculty members in their school who failed to do adequate research risked losing their position. Should such a policy be implemented across the university? Any move in this direction would bring AU a step closer to the "publish or perish" culture that characterizes many international universities,

especially in the United States. Some Thai universities may be moving in this direction, despite tensions that result from Thailand's "affiliative" cultural traditions. For AU, with its strong Catholic legacy of ethics and teaching, this will be an even more complex and central debate as the university charts its future path.

In sum, short-term and long-term planning to improve faculty research productivity in Thailand could proceed in accordance with the policy adjustments outlined below.

Short-term plan:

1. Provide more time to faculty members to allow quality research to proceed.
2. Create opportunities for faculty members to attend conferences in their field to increase their connections and partnership opportunities, global and local.
3. Invite expert visiting scholars to lecture students and participate in research workshops.
4. Hire more faculty members who are motivated to do research, and make this research focus a criterion for hiring new faculty.

Long-term plan:

1. Set up a university-wide strategic plan for research.
2. Make research productivity a higher priority for university administration.
3. Include faculty research productivity among the top priorities in the university mission statement.
4. Allocate significantly more resources and funding to faculty research.
5. Revise incentive policies, including promotions, in order to motivate more research.
6. Through research workshops and mentoring, assist faculty members to improve

their skills in conducting research, in applying for research grants, and in networking with potential research partners, both international and local.

Limitations

One part of this study was the interviewing of the eight most active and inactive researchers at AU. This part of the research could have been strengthened by having more interviews of this type.

The cultural context of *krengjai* (see Moore, 1998; Becker, 2008) influenced the interview findings at the level of administrators. It has some effect on one administrator, for example who seemed to try to save face for other administrators. This key informant does not share any negative comments at all. This might be because of the fear of consequences.

In collecting a random sample of faculty résumés, there is one difficulty. Only round 20 faculty members of 75 updated their résumés. The rest did not. This affects the accurate analysis and may lead to underestimating research productivity.

Apart from limitations, one significant success of this study is that there is no denial from any interviewees. The author could reach hundred percent of response rate for all targeted interviews.

Final Reflections: The Thai Paradox

Actually Thailand has invested heavily in education. Currently the Ministry of Education receives more budget than any other ministry in the Thai government. Thailand has often ranked near the top in terms of percent of national budget spent on education (Fry & Bui, 2013). This investment primarily has gone into the quantitative expansion of the educational system, massification of higher education, a large personnel system, and physical infrastructure improvements. But as Dr. Yongyuth (date?) has noted Thailand's lags far behind many of its Asia-Pacific neighbors in terms of R & D expenditures as a percentage of GDP. The data presented in this dissertation indicate that Thailand in general and AU in particular are not realizing their R & D potential.

This paradox places Thailand at risk in terms of what has been termed the middle income trap (Gill & Kharas, 2007). The prominent economist Paul Krugman (1994) two decades ago was stressing that any nation's future depends on the productivity of its people. From 1960 to 1990 Japan increased its productivity per capita faster than any country in world history, contributing to its becoming a world economic power. With the "Miracle on the Han River" similarly Korean has become an advanced economy with impressive technological prowess. In both the Japan and Korea cases, there was substantial investment in R & D and human resource development.

Thus, as many countries such as Japan and Korea developed industrial policies, Thailand critically needs a national research policy to foster excellence in research, particularly quality applied research which will enhance Thailand's national competitiveness and facilitate its escaping the middle income trap. The designation of nine institutions as research universities is a step in the right direction.

Assumption University, a private institution and Thailand's first international university, with its strong Catholic heritage of ethics and teaching and its new world-class campus, has also the potential to strengthen its research profile to enhance even more the quality of its teaching and learning environment. For that goal to become a reality, AU must give higher priority to creating a favorable academic research climate with increased funding and incentives for doing useful research.

Bibliography

- Academic Ranking of World Universities. (2012, August 15). Academic of world class university [Press Release]. Retrieved January 10, 2013, from www.shanghairanking.com/ARWU-2012-Press-Release.html
- AcademyRank.com. (2014). *World ranking*. Retrieved July 22, 2014, from www.academyrank.com/rank.php?page=35
- Adelman, C., Kemmis, S. & Jenkins, D. (1980). *Rethinking case study: Notes from the second Cambridge conference*. In H. Simons (ed.) *Towards the Science of the Singular*. Center for Applied Research in Education, University of East Anglia, 45-61.
- Argyris, C. (1980). *Inner contradictions of rigorous research*. New York: Academic Press.
- Assumption University. (2008). Admissions. Retrieved December 14, 2012, from www.admissions.au.edu/index.php?option=com_content&view=article&id=108&Itemid=119
- Assumption University. (2009). Graduate school. Retrieved December 20, 2012, from www.graduate.au.edu/
- Assumption University. (2012). *Internal audit and assessment report*. Unpublished manuscript.
- Assumption University. (2012). *Self assessment report*. Retrieved October 21, 2013, from www.qa.au.edu/AU_QA/QA%20report/AU-SAR_2011/Au-SAR%202011-6-July%20-2012-final-new%20%28edit%29%2027%20Sep%2012.pdf
- Assumption University. (2013). Self-assessment report academic year 2012. Retrieved February 28, 2014, from

www.qa.au.edu/AU_QA/QA%20report/AU-SAR_2012/AU-SAR%202012-FULL%20PAPER%20updated%2013-9-13%20edited%20docx.pdf

Atagi, R. (2011). *Secondary teacher research in Asia: Secondary teacher in Thailand*. Bangkok: UNESCO.

Austin, A. E., Gappa, J. M. & Trice, A. G. (2007). *Rethinking faculty work: Higher's education strategic imperative*. San Francisco, CA: Jossey – Bass.

Baldwin, R. G. & Blackburn, R. (1981). The academic career as a developmental process. *Journal of Higher Education*, 52(6), 598-614.

Bangkokbiznews. (2010). นายกษณุนงานวิจัยขับเคลื่อนประเทศ. [PM Abhisit

supported Thai research to move country forward]. Retrieved June 15, 2012, from

www.bangkokbiznews.com/home/detail/politics/education/20100826/349884/%E0%B8%99%E0%B8%B2%E0%B8%A2%E0%B8%81%E0%B8%AF%E0%B8%AB%E0%B8%99%E0%B8%B8%E0%B8%99%E0%B8%87%E0%B8%B2%E0%B8%99%E0%B8%A7%E0%B8%B4%E0%B8%88%E0%B8%B1%E0%B8%A2%E0%B8%82%E0%B8%B1%E0%B8%9A%E0%B9%80%E0%B8%84%E0%B8%A5%E0%B8%B7%E0%B9%88%E0%B8%AD%E0%B8%99%E0%B8%9B%E0%B8%A3%E0%B8%B0%E0%B9%80%E0%B8%97%E0%B8%A8.html

Bangkok Post. (2010). Somwung opens up on enhancing teacher quality. Retrieved April 3, 2013, from www.bangkokpost.com/learning/education-features/31282/somwung-opens-up-on-enhancing-teacher-quality to become quality educators

Bangkok Post. (2014, January 15). Thailand stuck in middle-income trap. Retrieved June 18, 2014, from www.bangkokpost.com/print/389609/

- Baran, P. A. (1957). *The political economy of growth*. New York: Monthly Review Press.
- Bauerlein, M., Gad-el-Hak, M., Grody W., McKelvey, B. & Trimble, S. (2010). We must stop the avalanche of low quality research. Retrieved January 5, 2013, from <http://chronicle.com/article/We-Must-Stop-the-Avalanche-of/65890/>
- Becker, B. P. (2008). *Speak like a Thai: Volume 4: "Heart words"*. Berkeley, Calif: Bangkok: Paiboon Publishing.
- Behravan J., & Hedjazi, V. (2011). Study of factors influencing research productivity of agriculture faculty members in Iran. *Higher Education* 62, 635-647.
- Bland, C. J., Center, B. A., Finstad, A. D., Risbey, K. R., & Staples, J. G. (2005). A theoretical, practical, predictive model of faculty and department research productivity. *Academic Medicine*, 80(3), 225-237.
- Bloedel, J. R. (2001). Judging research productivity on an entrepreneurial campus. *Evaluation Research Productivity*. 105. Retrieved December 25, 2012, from <http://merrill.ku.edu/publications/2001whitepaper>
- Blumenstyk, G. (2013). 'Report card' faults universities' impact on global health. Retrieved April 9, 2013, from www.chroniclereview.info/article/Report-Card-Faults-Research/138281/
- Bryman, A. (2004). Qualitative research on leadership: A critical but appreciative review. *The Leadership Quarterly*, 15, 729-769.
- Center for Excellence, Assumption University. (2008). *Assumption university strategic plan (2008-2022)*. Bangkok: Assumption University of Thailand.
- Chandler, D. (1997). An introduction to genre theory. Retrieved from January 20, 2013, from www.aber.ac.uk/media/Documents/intgenre/chandler_genre_theory.pdf

- Chen, Y., Gupta, A., & Hoshower, L. (2006). Factors that motivate business faculty to conduct research. *Journal of Education for Business*, 179-189.
- Chularat, S., & Wannapa, K. (2013). Thailand needs more qualified researchers. Retrieved from October 28, 2013, from www.nationmultimedia.com/national/Thailand-needs-more-qualified-researchers-30211338.html
- Clark, B. R., & Neave, G. R. (1992). *In encyclopedia of higher education* . Headington Hill Hall, Oxford: Pergamon Press.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education*. (5th ed.). New York, NY: RoutledgeFalmer.
- Coleman, J. S. (1988). Social capital in creation of human capital. *American Journal of Sociology*, 94, 95-120.
- Commission on Higher Education Quality Assurance. (2012).
 เงินสนับสนุนงานวิจัยหรืองานสร้างสรรค์. [External grant for research and creative work]. Retrieved August 12, 2014, from
- Creamer, E. G. (1998). *Assessing faculty publication productivity: Issues of equity*. Washington, D.C: ASHE-ERIC Higher Education Report No. 420 243.
- Creswell, J. W., Patterson, R. A., & Barnes, M. W. (March, 1984). *Enhancing faculty research productivity*. Unpublished paper presented at the meeting of the Association for the Study of Higher Education, Chicago, Illinois.
- Creswell, J. W. (1985). Faculty research performance: Lessons from the sciences and social sciences (ASHE-ERIC Higher Education Report No. 4). Washington, DC: Association for the Study of Higher Education.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed*

- methods approaches*. (3rd ed.). Thousand Oaks, CA: Sage.
- Cybermetrics Lab. (Spanish National Research Council, CSIC). (2014).
Methodology. Retrieved July 22, 2014, from
www.webometrics.info/en/Methodology
- Deal, T. E. & Peterson, K. E. (1998). How leaders influence the culture of schools.
Educational Leadership. 58(1), 28-30.
- Denscombe, M. (2004). *The good research guide*. (2nd ed.). New York: McGraw-Hill.
- Dundar H. & Lewis, D. R. (1998). Determinants of research productivity in higher education. *Research in Higher Education*. 39(6), 607-631.
- Etzkowitz, H. & Leydesdorff, L. (1996). Emergence of a triple helix of industry-university-government relations. Retrieved July 31, 2014, from
www.leydesdorff.net/th1a/
- Feuerherm, L. (2009). SweetTango apple hits the market. Retrieved April 2, 2013, from www.mndaily.com/2009/09/07/sweetango-apple-hits-market
- Finkelstein (Ed), *ASHE reader on faculty issues in colleges and universities*.
Lexington, Mass: Ginn, 1987.
- Frankenberg, P. (2000). The role of universities in basic research in Germany. In Wiley-VCH (Ed.), *The impact of national goals on basic research* (pp. 56-62). Germany: The Federal Republic of Germany.
- Fry, G. W., Bi, H. (2013). The evolution of educational reform in Thailand: The Thai educational paradox, *Journal of Educational Administration*. 51(3), 1- 46.
- Fullan, M. (2002). The change leader. *Educational Leadership*. 59(8), 16-21.
Retrieved October 15, 2014, from www.ascd.org/publications/educational-leadership/may02/vol59/num08/The-Change-Leader.aspx

- Gaston, J. (1978). *The reward system in British and American science*. New York: John Wiley & Sons.
- Gibbs, A. (2009). The importance of research on research. Retrieved June 18, 2012, from www.universityworldnews.com/article.php?story=20090622215201783
- Global Sherpa. (2011). Global science research and collaboration: Quality vs. quantity. Retrieved January 12, 2013, from www.globalsherpa.org/research-science-technology-international
- Graduate and Professional Schools. University of Minnesota. (2013). Professional school admission. Retrieved January 9, 2013, from www1.umn.edu/twincities/professional/index.html
- Etzkowitz, H., & Leydesdorff, L. (1996). Emergence of a triple helix of university-industry-government relations. *Science and Public Policy*, 23, 279-86.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and “mode 2” to a triple helix of university-industry-government relations. *Research Policy*, 29, 109-123.
- Gubrium, J. F., & Holstein, J. A. (2002). *Handbook of interview research context and method*. California: Sage.
- Hallinger, P. (2007). Research on the practice of instructional and transformational leadership: retrospect and prospect. Retrieved October 2, 2014, from http://research.acer.edu.au/cgi/viewcontent.cgi?article=1004&context=research_conference_2007
- Hancock, G. R., & Mueller, R. O. (2010). *The reviewer's guide to quantitative methods in the social sciences*. New York: Routledge.

- Hofstede, G., Hofstede, G. J. & Mintov. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). New York: McGraw – Hill.
- Hu, Q., & Gill, T. G. (2000). Is faculty research productivity: Influential factors and implications. *Information Resources Management Journal*, 13(2), 15–25.
- Ingalls, W. B., (1982). Increasing research productivity in small universities: A case study. *The Canadian Journal of Higher Education*. 12(3), 59-64.
- Issara Institute Thai Press Development Foundation. (2011). ดร.ยงยุทธ์เปิดตัวเลขบงกชวิจัยไทย ติดกลุ่มต่ำสุดในโลก. [Dr. Yonguth revealed the Thai research fund in the lowest group of the world]. Retrieved November 20, 2012, from www.isranews.org/investigate/278-2011-02-24-04-31-20/14335-2011-03-10-04-06-38.html
- Kanyanan, Y. (2010). A model for faculty development of private university in Thailand. Retrieved November 20, 2012, from www.withayajarn.com/?p=310
- Kearny, L. M. (2009). *Impact of global rankings on higher education research and the production of knowledge*. (Report No. 15). Retrieved January 28, 2013, from <http://unesdoc.unesco.org/images/0018/001816/181653e.pdf>
- Krugman, P. (1997). *The age of diminished expectations: U.S. economic policy in the 1990s* (3rd ed.). MA, Cambridge: The MIT Press.
- Layzell, D. (1996). Faculty workload and productivity: Recurrent issues with new imperatives. *Review of Higher Education*, 19(3), 267-282.
- Levin, H. M. (1991). Raising productivity in higher education. *Journal of Higher Education*, 62(3), 242-262.

- Lincoln, Y.S. & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills: Sage.
- Lindblom, C. E., & Cohen, D. K. (1979). *Usable knowledge: Social science and social problem solving*. New Haven and London: Yale University Press.
- Lodahl, J. B., & Gordon, G. (1972). The structure of scientific fields and the functioning of university graduate departments. *American Sociological Review*, 37, 57-72.
- Mahidol University. (2010). Stang Mongkolsuk Museum. Retrieved August 24, 2014, from www.mahidol.ac.th/mueng/stangmongkolsuk_article.htm
- Matichon. (2012, October 12). ตื่นเร่่งดัน มหาลัยไทยขึ้นอันดับโลก
ทุ่มงบวิจัยให้กว่าหมื่นล้าน/ปี เพิ่มเงินเดือนป.เอก 3 หมื่นบาท. [Rush to push Thai university to the world class ranking proposing the idea of ten billion baht a year and thirty thousand baht for Ph. D.]. Retrieved Jan 8, 2013, from www.matichon.co.th/news_detail.php?newsid=1350006451&grpId=00&catid=00
- Meek, V. L., Teichler, U., & Kearney, M. L. (2009). *Higher education, research and innovation: Changing dynamics*. Kassel: International Centre for Higher Education Research.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. (2nd ed.). California, SF: Jossey – Bass.
- Ministry of Education. (2011). เอบแคชหลักสูตรนานาชาติรุกพื้นที่อีสาน. [ABAC propose the international curriculum to Isaan region]. Retrieved January 3, 2013, from www.moe.go.th/moe/th/news/detail.php?NewsID=23706&Key=hotnews

- Moore, C. G. (1998). *Heart talk: Say what you feel in Thai*. Bangkok: Heaven Lake Press.
- Nisbet, J. & Watt, J. (1984). in Bell, J., Bush, T., Fox, A., Goodey, J. and Goulding, S. (eds.). *Conducting small-scale investigations in educational management*, London: Harper Row.
- Office of National Education Standards and Quality Assessment. (2006).
บทสรุปผู้บริหาร มหาวิทยาลัยอัสสัมชัญ. [Executive summary of Assumption University]. Retrieved November 18, 2012, from
www.onesqa.or.th/onesqa/th/Report/university.php
- Patton, M. G. (1980). *Qualitative evaluation methods*. California, Beverly-Hills: Sage.
- Protevi, J. (ed.). (2006). *Dictionary of continental philosophy*. New Haven and London: Yale University Press.
- Putnam, R. D. (2000). *Bowling alone: Civic disengagement in America*. New York, NY: Simon and Schuster.
- Rapee, S. (1975). *The Thai professorial role: An assessment of role expectations*. Bangkok: National Institute of Development Administration, Research Center.
- Rayong Institute of Science and Technology. (2013). Rayong institute of science and technology. Retrieved July 20, 2014, from
www.pttplc.com/th/Documents/Sustainability%20Highlight/Artwork_RAIST%20Profile.pdf
- Royal Netherlands Academy of Arts and Sciences. (2011). *Quality indicators for research in the humanities*. Edenspiekermann, Amsterdam: The Committee on Quality Indicators in the Humanities.
- Sageemas, N. W., Suchada, W., & Suwimon, W. (2009). Factors affecting research

- productivity of faculty members in government universities: Lisrel and Neural network analyses. *Kasetsart Journal of Social Science* 30,67 – 78.
- Sanga, S. & Yongyuth, Y. (June, 1983). *The status and quantitative policy targets of science and technology in Thailand*. Unpublished paper presented at The Asean –EEC Seminar on Science and Technology Indicators and Science Policy, London.
- Shilie, W. & Yu, W. (2000). The impact of national objectives and motivation of scientists. In Wiley-VCH (Ed.), *The impact of national goals on basic research* (pp. 6-10). Germany: The Federal Republic of Germany.
- Sippanondha, K., & Textor, R. B. (1990). *The middle path for the future of Thailand: Technology in harmony with culture and environment*. Honolulu, Hawaii, U.S.A: Institute of Culture and Communication, East-West Center.
- Sippanondha, K. (1992). ความรู้สู่อนาคต. [Knowledge in pursuit of the future]. Bangkok: Chulalongkorn University Press.
- Sokal, A. & Bricmont, J. (1998). *Fashionable nonsense*. New York, NY: St. Martin Press.
- Spath, L. (2000). The German industrial and scientific location. In Wiley-VCH (Ed.), *The impact of national goals on basic research* (pp. 12-15). Munich, Germany: The Federal Republic of Germany.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.
- Stanford University. (2014). *Triple helix research group*. Retrieved August 17, 2014, from http://triplehelix.stanford.edu/3helix_concept
- Suntaree, K. (1990). *Psychology of the Thai people: Values and behavioral patterns*. Bangkok, Thailand: National Institute of Development Administration

(NIDA).

Thai-Journal Citation Index Center. (2012).

รายชื่อวารสารที่บันทึกผลงานข้อมูลเรียบร้อยแล้ว.

[Journals listed on the official centralized database]. Retrieved December 20, 2012, from www.kmutt.ac.th/jif/public_html/database_journal.html

The Nation. (2013). *3 Thai universities named among 100 best in Asia*. Retrieved May 20, 2014, from www.nationmultimedia.com/national/3-Thai-universities-named-among-100-best-in-Asia-30203864.html

The Office Human Resources Management. (2006).

ข้อบังคับมหาวิทยาลัยอัสสัมชัญว่าด้วยการบริหารงานบุคคล. [Assumption University Human Resource Management Regulations]. Bangkok: Assumption University.

The Royal Society. (2011). *Global scientific collaboration in the 21st century*. London: Calton House Terrace.

Times Higher Education. (2014). World university rankings 2013-2014 methodology. Retrieved July 22, 2014, from www.timeshighereducation.co.uk/world-university-rankings/2013-14/world-ranking/methodology

United Nations Thailand. (2008). Emerging status. Retrieved June 16, 2012, from www.un.or.th/thailand/development.html

Vasil, L. (1996). Social process skills and career achievement among male and female academics. *Journal of Higher Education*, 67 (1), 103-114.

Walford, G. (ed.) (1994). *Researching the Powerful in Education*. London, UCL Press.

- Wannapa, P. (2009). Nation's 7 top universities qualify for national research.
Retrieved January 28, 2013, from
www.nationmultimedia.com/2009/08/03/national/national_30108881.php
- Warr, P. (2011). Thailand, a nation caught in the middle-income trap. Retrieved July 31, 2014 from www.eastasiaforum.org/2011/12/18/thailand-a-nation-caught-in-the-middle-income-trap/
- Webber, K. L. (2011, July-September). Factors related to faculty research productivity and implications for academic planners. *Society for College and University Planning*, pp. 32 -43.
- Weerayudh, W. (2014). Thai social relations, Weerayudh's "affiliative personality" and Mulder's "moral-amoral power" frame. Retrieved June 18, 2014, from http://factsanddetails.com/southeast-asia/Thailand/sub5_8c/entry-3219.html
- Williams, B. R. (1992). Applied research and technology transfer. In *encyclopedia of higher education* (1st ed., pp. 853-863). Headington Hill Hall, Oxford: Pergamon Press.
- Wojcik, A. M. & Yongyuth, Y. (Eds). (1997). *Science and technology in Thailand: Lessons from a developing economy*. Bangkok: National Science and Technology Development Agency.
- Wolcott, H. F. (1992). Posturing in qualitative inquiry. In M. D. LeCompte, W. L. Millroy, and J. Preissle (eds.), *The handbook of qualitative research in education*. Orlando, Fla.: Academic Press, 1992.
- Yin, R. K. (2014). *Case study research design and methods* (5th ed.). Los Angeles, California: Sage.

APPENDICES

Appendix A: Interview Protocol (1)

Prominent Thai Experts

Introductory Protocol

Since you have been involved in Thailand research and development for more than a decade and hold a high position relevant to faculty research, you are in position to offer key insights for this study. You have received a consent form to sign, which indicates your consent to this interview.

1. How would you describe the development of the faculty research and development in Thailand in your in the past few decades?
 - How would you characterize the level of the government support in this area?
 - What has been the role of the private sector?
 - What has been the result in terms of faculty research quality?
2. In your view, how is Thai R&D faring today?
3. What are the challenges facing research in higher education?
4. What would you recommend to university leaders that might improve the research productivity of their faculty?
5. What would you recommend to faculty members seeking to improve the quality of their research?
6. Please share any of your own experiences or interesting experiences of people you know that may be relevant to the issue of faculty research productivity in Thailand?
7. What kind of research is most valuable for Thailand?

Appendix B: Interview Protocol (2)

International Expatriates Residing in Thailand

Introductory

Since you are actively involved in Thai higher education and research, you are in a position to offer key insights for this study. You have received a consent form to sign, which indicates your consent to this interview. With your permission, the interview will be recorded

A. Individual Background

1. How long have you been in Thailand?
2. What is your country of origin?

B. Individual Perspectives

1. In your view, what are the major challenges facing research in higher education in Thailand?
2. Based on your observations, what are the major obstacles that Thai faculty members face in doing research?
3. In general terms, how would you rate the overall research skill level of Thai faculty researchers?
4. In your opinion, what are some of the strengths and some of the weaknesses in Thai faculty research?
5. Are there some specific aspects that could be improved in order to assure quality research in Thailand?

C. Demographic Characteristics

1. Gender
2. Age

Appendix C: Interview Protocol (3)

Key Administrators at Assumption University

Introductory Protocol

Since you hold a top administrative position in Assumption are called upon to deal with issues related to faculty research and development, you are in position to offer key insights for this study. You have received a consent form to sign, which indicates your consent to this interview. With your permission, the interview will be recorded.

A. Interviewee Background

- 1 How long have you worked at Assumption University?

B. Individual Perspectives

1. What is “research” in your opinion?

Probe: Does it consist primarily of writing for journals, writing articles, textbooks, presenting research papers at conferences..., etc.?

2. How would you describe your own experiences in research?

B. Institutional Perspectives

1. In what way does your school unit support faculty research?
2. What problems/ challenges have you dealt with in seeking to improve the research productivity of the faculty at your school unit?
3. In your view, what kind of skills do faculty members tend to lack or need for doing quality research?
4. What are the major obstacles that faculty members face?
5. What kind of research is most valuable for AU? For Thailand?
- 6.

C. Demographic Characteristics

1. Age

AU Faculty Members

Introductory Protocol

Since you a faculty member at Assumption, you are in position to offer key insights for this study. You have received a consent form to sign, which indicates your consent to this interview. With your permission, the interview will be recorded.

A. Interviewee Background

1. How long have you taught at Assumption University?
2. In which school are you working?
3. How would you describe your workload?

_____ How many hours do you teach per week?

_____ Do you advise students?

_____ If yes, how many hours per week?

_____ Do you spend time on service or engagement activities for the university?

_____ If yes, how many hours per week?

_____ Do you spend time on administrative work?

_____ If yes, how many hours per week?

4. Overall, what do you think of your workload at Assumption University?

B. Individual Perspectives

1. What is “research” in your opinion?

Probe: Does it consist primarily of writing for journals, writing articles, textbooks, presenting research papers at conferences, etc.?

2. What inspires and motivates you to do research?
3. In your opinion, what skills are important for doing research?

4. What have been your most significant research accomplishments?

Please give concrete examples.

7. How would you describe your past research?

8. How would you describe your present research?

9. How would you describe your future plans for research?

C. Institutional Perspectives

1. In what way does your school support faculty research?

2. Do you consider AU to be generally supportive of faculty research?

3. In each case above, could you please provide examples?

4. In what specific ways could university support for research be improved?

5. What problems/ challenges have you dealt with in pursuing research in your school, and more generally at AU?

6. What are the most important things that would best contribute to improving faculty research productivity at AU?

7. For interviewees who have already engaged in extensive research and publishing.

7.1 What has contributed to your bring such an outstanding researcher?

7.2 How would you describe your past research? (What have you done so far?)

7.3 What is your research focus at present?

7.4 What do you plan for your future research?

D. Demographic Characteristics

1. Gender

2. Age

Ph. D. overseas or not? In English speaking country or not?

Level of education, Ph.D. or MA or BA?

Years of international experience outside Thailand?